

## CHAPTER 6

# NATURAL RESOURCES & ENVIRONMENT

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## 6 | NATURAL RESOURCES & ENVIRONMENT

**S**outhold Town's ecological areas are among the most valuable natural resources in New York State. Bounded by two U.S. Environmental Protection Agency (USEPA)-designated "Estuaries of National Significance," the Long Island Sound Estuary and the Peconic Estuary, the Town's lands and waters are protected by numerous planning documents, multi-agency regulations, and designations that recognize the quality of the areas and provide management strategies. In the future, management strategies will focus on protection, adaptation, and sustainability.



*Town Preserve in Cutchogue*

Managing and preserving our natural resources while promoting responsible user experiences is essential to maintaining the quality of life within the Town. Correspondingly, managing consumable resources to achieve balance and sustainability is also extremely important. With continued proactive and collaborative management of the Town's resources, the quality of them will improve.

An integral element of the management approach must include the implementation of an educational campaign to increase awareness.

This chapter expands on relevant goals and objectives gathered from a series of planning initiatives, plans, studies, reports, and public input sessions conducted over the last 20 years. Collectively, this information creates the vision of the Town with respect to natural resources and establishes the fundamental goals and objectives to achieve the vision.

### Background

This chapter of the Comprehensive Plan has been informed by several recent planning documents. The Local Waterfront Revitalization Program (LWRP), completed in 2004, provides a comprehensive analysis of the Town's resources and outlines a framework of goals for the developed coast, natural coast, and public coast. The program also includes detailed lists of projects that the Town has identified for implementation. The Fishers Island Strategic Plan 2007–2017 (Scopaz) provides an effective planning framework for the Island and identifies numerous community-based recommendations that were integrated within this plan.<sup>1</sup> Finally, Plum Island was the subject of a 2012 Draft Environmental Impact Statement (DEIS), which provided a comprehensive assessment of the Island's natural resources. The DEIS was referenced to formulate goals and objectives in this document.

All of the above-referenced plans are available on the Southold Town website via the weblink icon on the home page.

<sup>1</sup> The Fishers Island Strategic Plan 2007–2017 was prepared for the Fishers Island Hamlet of the Town of Southold in September 2007. It was written by Valerie M. Scopaz, AICP, of VMS Planning Services. See [https://issuu.com/fishersislandny/docs/hamlet\\_study\\_-\\_fi\\_strategic\\_plan\\_20](https://issuu.com/fishersislandny/docs/hamlet_study_-_fi_strategic_plan_20).

# WATER RESOURCES

## Groundwater

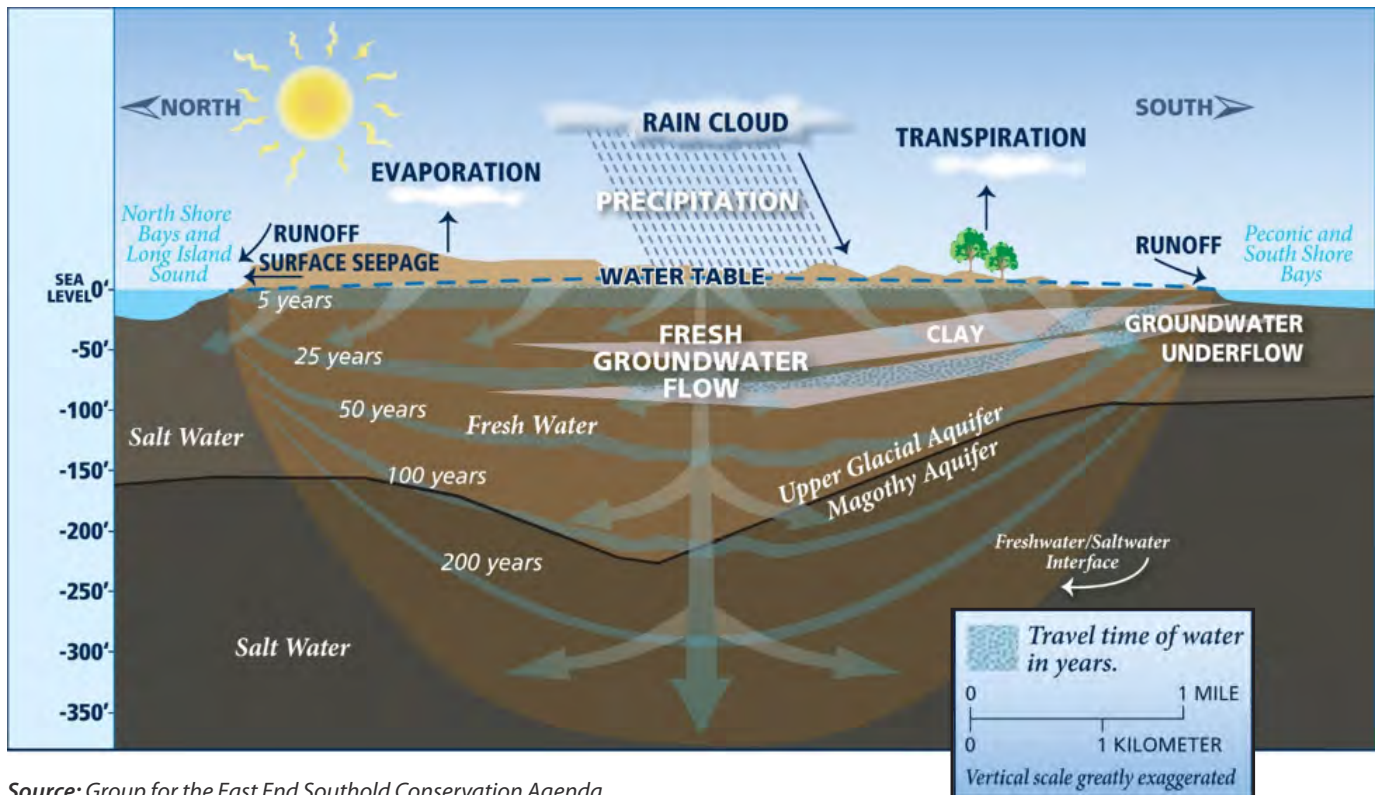
Southold Town depends on a sole source aquifer for its potable water supply. The aquifer is replenished solely by precipitation, which averages approximately 44 to 45 inches per year. The U.S. Geological Service (USGS) estimates that the portion of precipitation that infiltrates the soil, eventually reaching the groundwater

reservoir is equal to about 50 percent of mean annual precipitation or approximately 22 to 22.5 inches, or 1.9 billion gallons per year. The water cycle is shown as

**Figure 6.1.**

Drinking water is drawn from the Groundwater Management Zone IV of the Central Suffolk County Special Groundwater Protection Area (SGPA), which encompasses Shelter Island and the northern and eastern portions of the South Fork in addition to the eastern portion of Riverhead.

**Figure 6.1** Water Cycle



Source: Group for the East End Southold Conservation Agenda.

The aquifer is characterized by a series of isolated water table mounds, each of which corresponds to a hydraulically distinct freshwater flow system. The North Fork is comprised of three oblong water table mounds east of Mattituck Creek and James Creek that represent the principal freshwater flow systems. The freshwater flow systems contain a series of flow subsystems, each of which corresponds to the area contributing groundwater to an individual water body. These flow subsystems are generally separated from one another by local and regional groundwater divides (creeks and bays) that extend inland from the coast and converge toward the respective water table mounds (USGS).

It is important to recognize that all drinking water and irrigation water supply on the North Fork is withdrawn from the upper glacial aquifer because groundwater in the deeper aquifers is mostly saline.

The importance of Southold's groundwater resources are recognized by the designation of certain areas of the aquifer by the New York State Department of Environmental Conservation (NYSDEC) as SGPA's. These areas are particularly important to groundwater protection because they are the core areas of recharge to Southold's aquifer. The aquifer is shown in **Figure 6.2.**

**Figure 6.2 Southold Aquifer**

Source: Group for the East End Southold Conservation Agenda.

The water supply, treatment, distribution, and storage facilities for mainland Southold's public water supply are owned and operated by the Suffolk County Water Authority (SCWA). There is also significant usage of groundwater from private wells for residential, agricultural, and commercial use.

Fishers and Plum Islands have their own unique water supply conditions. Fishers Island water supply is dependent upon a sole source aquifer and 22 miles of water mains, an equalization reservoir, a surface water treatment plant, a groundwater treatment facility, a well field and three surface water reservoirs: Barlow Pond, Middle Farm Pond, and Treasure Pond. The numerous ponds on Fishers Island serve as the primary catchment and recharge areas for the island's aquifer. Due to its hilly topography, most of the precipitation that falls on Fishers Island flows to one of the numerous freshwater ponds or directly to the coastal shoreline.

According to the Hydrogeologic Report Conducted on Fishers Island, New York by Groundwater, Inc. (April 1990), groundwater recharge on Fishers Island is estimated to be approximately 709 million gallons per year. The water supply, treatment, distribution, and storage facilities for approximately 624 customers on Fishers Island are owned and operated by the Fishers Island Waterworks, a subsidiary of the Fishers Island Development Corporation (FIDCO).

The Plum Island DEIS identifies groundwater on Plum Island within the sand and gravel of the Upper Pleistocene Glacial Deposits. The shallow sole-source aquifer extends from land surface at the wetlands to an approximate depth of 100 feet in the center of the Island. The aquifer is recharged solely by precipitation, which averages approximately 45 inches per year. Safe yield for the aquifer is estimated to range from 150,000 to 200,000 gallons per day (gpd).

## GOAL AND OBJECTIVES

### Goal 1: Conserve Water Quantity

**The potable water supply in the Town is limited, and without conservation measures, the supply of potable water in the aquifer is strained, especially in times of drought.**

One of the largest consumers of water is the irrigation of lawns, which increases during droughts. As the population of the Town continues to grow, increased demand on the water supply system will occur, forcing

an expansion of the public water supply system. Expansion is expensive and difficult due to areas of groundwater contamination and salt-water intrusion. Consumer rates for water will increase as costs rise for the SCWA.

Southold has been identified as one of two areas in Suffolk County where groundwater quality has affected the existing groundwater supply. The shallow aquifer is limited by underlying and surrounding salt

water and contaminants such as nitrates and pesticides. Nitrate levels exceeding 6 mg/L were found in supply wells located on the North Fork in unsewered agricultural areas.<sup>2</sup>

Water supply projections indicate that Southold will need additional water sources by 2030. The projected water consumption is expected to rise to 4.6 million gallons per day (mgd) from 2.8 mgd, assuming that all homes currently on private wells would be on community supply by 2030 (including Orient). By 2030, if water continues to be used at the current rate, over 14,500 gallons per minute (gpm) will be required at peak times, a rate that cannot be produced by the current water supply system.

To address the projected water supply needs, the SCWA has indicated that approximately 6,100 gpm of additional capacity would be required (excluding the storage tank at Moore's Lane). This would require the siting and installation of 38 new wells if no conservation measures are implemented. An alternative to pumping an ever-increasing amount of water is to implement a water conservation program that minimizes the irrigation of lawns, in addition to other measures. The Suffolk County Comprehensive Water Resources Management Plan (SCCWRMP) indicates that if successful, the water conservation option would require the addition of only three new supply wells to meet the 2030 peak demand.

The conservation approach is the most practical one for residents and the SCWA, as there are significant concerns with developing new wells: salt water up-coning/intrusion; impact to wetlands and surface water bodies; additional capacity; identification and acquisition of available land for well sites and potential treatment facilities; and cost associated with construction of the additional wells, transmission mains, and treatment facilities.

According to SCWA, if conservation measures are not implemented, a connection to the Riverhead transmission line to serve Southold Town would be the most feasible and cost-effective alternative. This option requires the fewest new wells; however, numerous factors could affect the feasibility of this scenario. Complete details can be found in the SCCWRMP.

Regardless of the short-term supply projections, planning for a long-term water supply in Southold is important and conservation practices must be developed. Conservation practices can be accomplished through public education and voluntary or mandatory homeowner participation. Following are objectives to help implement water conservation initiatives and strategies to conserve drinking water.

### 🎯 Objective 1.1

#### Consider mandatory water conservation measures for residential irrigation.

- A | Designate odd/even days for lawn irrigation.
- B | Use rain meters to prevent automatic sprinklers from activating on rainy days.



### 🎯 Objective 1.2

#### Work with SCWA to implement water conservation practices and programs.

- Implement the SCWA groundwater conservation measures that include public education and outreach on water conservation practices and emergency measures in periods of drought through Town media.

### 🎯 Objective 1.3

#### Develop water conservation and educational demonstration sites.

- Partner with local water conservation advocates to fund, design, and construct educational demonstration sites at the Peconic School, Town Hall, and on Fishers Island.

<sup>2</sup> Suffolk County Comprehensive Water Resources Management Plan (SCCWRMP) by SCWA. Found at <https://www.suffolkcountyny.gov/Departments/Health-Services/Environmental-Quality/Water-Resources/Comprehensive-Water-Resources-Management-Plan>.

### 🎯 Objective 1.4

#### Support the Peconic Estuary Program initiatives for water conservation practices.

The Peconic Estuary Program has initiated a Homeowner Rewards Program to provide water conservation opportunities to homeowners within the Peconic Estuary boundaries that surround the impaired water body, Hashamomuck Pond, in the hamlet of Southold. Funds are available to homeowners for rain gardens, downspout re-direction, rain barrels, conservation landscaping, and dry wells.

- **Responsible Parties:** Southold Town Board, Town of Southold Planning Department, Town of Southold Land Preservation Department
- **Possible Partnerships:** Suffolk County Water Authority, Suffolk County Department of Health, New York State Department of Environmental Conservation, National Oceanic and Atmospheric Association, U. S. Environmental Protection Agency and other non-governmental agencies

### 🎯 Objective 1.5

#### Limit the use of the sole source aquifer for filling pools.

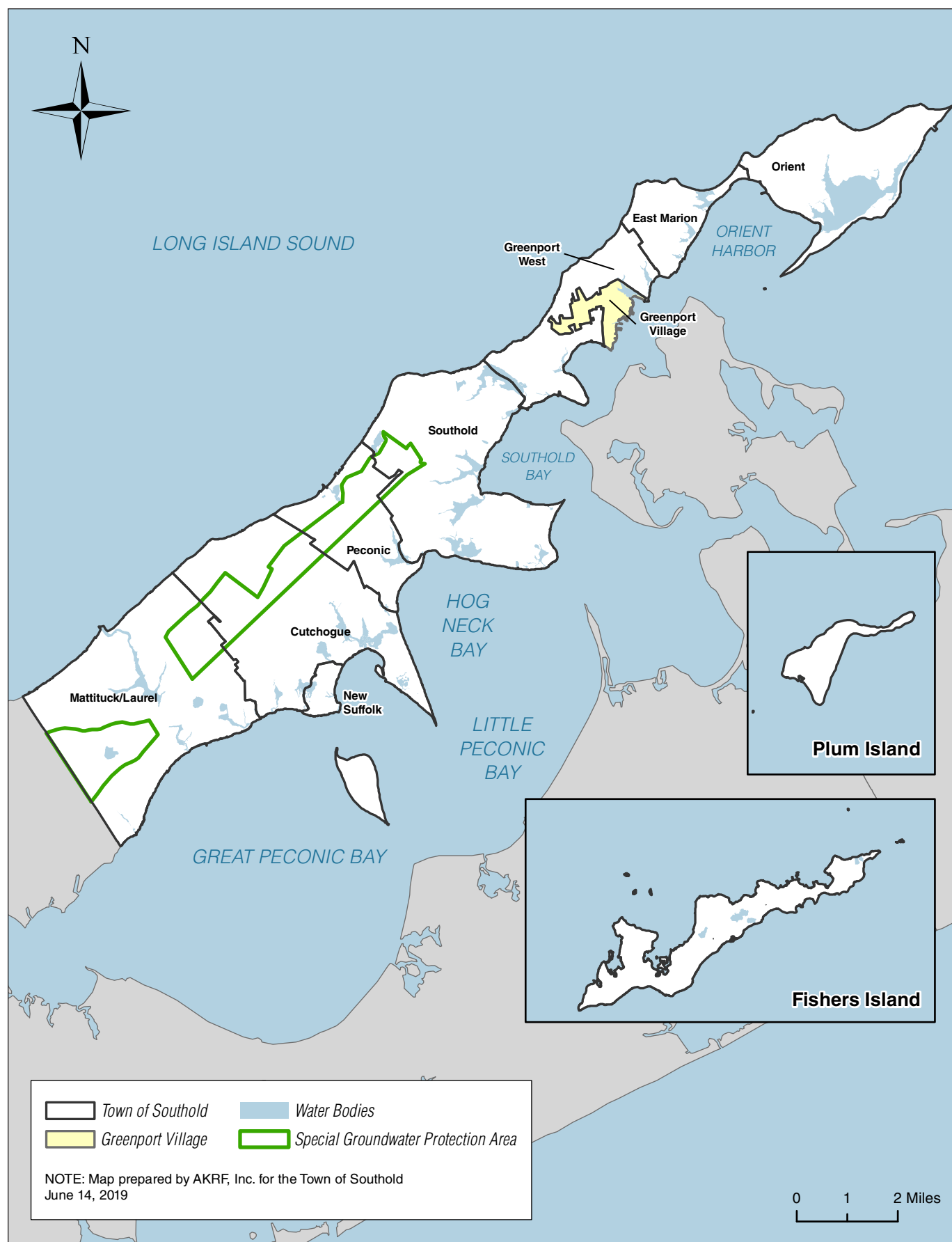
Pools are being installed at a high rate. The water to fill them comes from our sole source aquifer needed for drinking water and irrigation of farms. In periods of drought and/or in coming years when the strain on our aquifer is expected to be much higher, the filling of pools needs to be a lower priority.

### 🎯 Goal 2: Protect Groundwater Quality

#### The protection of groundwater quality is crucial for the health of the residents and visitors of the Town.

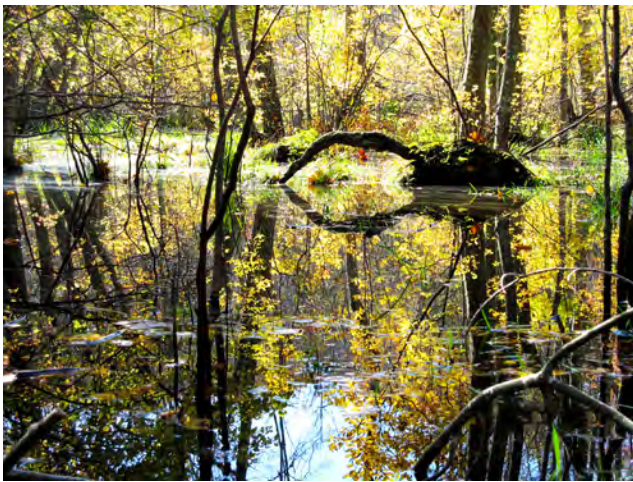
The Town's two SGPAs for which water quality protection management strategies were developed include portions of the hamlets of Mattituck, Laurel, Cutchogue, Peconic, and Southold (see **Figure 6.3**). The designation of the SGPAs was based on two considerations, that "this area represents a major portion of the locally significant deep recharge and that designation could facilitate the improvement and ultimate restoration of groundwater quality" (The Long Island Comprehensive Special Groundwater Protection Area Plan, 1992).<sup>3</sup>

3 Koppelman, L.E. and Long Island Regional Planning Board. "The Long Island Comprehensive Special Groundwater Protection Area Plan" Long Island Regional Planning Board: 1992. Also <https://books.google.com/books?id=JeliHAAACAAJ>.

**Figure 6.3 Southold Town: Special Groundwater Protection Areas**

The SGPA Plan identifies the main groundwater quality issue within the Southold SGPA as consisting of contamination primarily from the historical use of pesticides used for agricultural purposes. Pesticides have contaminated ground water throughout much of the horizontal and vertical extent below the Southold SGPA (Koppelman, et al, 1992).

The objectives in this Comprehensive Plan are based, in part, on the SGPA Plan that offers recommendations for management strategies designed to reduce current and future groundwater contamination, avoid creating new sources of contamination, and provide the maximum protection of the groundwater in the SGPAs.



In addition to management strategies, SCWA tests public water systems on a regular basis and publishes annual reports outlining the results for two SCWA Distribution Systems in Southold Town. One is known as Distribution Area 30, and is comprised of the 49 supply wells that serve most of Southold (except for Orient). The other, known as Distribution Area 35, is comprised of one neighborhood in Orient known as Browns Hills.

Certain areas have experienced degraded groundwater. In the 2011 report for Distribution Area 30, the SCWA found evidence of pollutants including compounds from pesticides, herbicides, pharmaceuticals, and personal care products (9 of the 16 compounds tested). Also found was Methyl Tert Butyl Ether (a volatile organic compound [VOC]) that was used as an additive in gasoline until it was banned in 2004. Nitrate, which is linked to red tide blooms in Peconic Bay, was measured at an average value of 3.78 mg/l and a high value of 7.97 mg/l. The results are lower than the established Maximum Contaminant Levels (MCL) for drinking water quality for nitrates, which is 10 mg/l.

Also in 2011, the SCWA added filtration systems to Sunset Dr. #2A and #4A Mattituck wells to remove the contaminants Aldicarb Sulfone and Sulfoxide and Metolachlor ESA. Filtration was also added at the Rocky Point Rd. #4 East Marion well to remove the contaminants TCPA (Tetrachloroterephthalic Acid, a breakdown product of Dacthal) and Metolachlor.

In the Browns Hills System, 1 out of 16 pesticides, herbicides, pharmaceuticals, and personal care products compounds tested were found, but no VOCs were detected in 2011. Nitrate in this system had an average value of 3.22 mg/l and a high value of 10.87 mg/l, which exceeds the MCL (SCWA 2011).

The Suffolk County Department of Health Services (SCDHS) permits and monitors commercial and residential water supply wells pursuant to Articles 4 Water Supply and Article 6 (Realty Subdivisions, Development and Other Construction Projects) of the Suffolk County Sanitary Code (2011). SCDHS also regulates 35 non-community water system sites, including Plum Island, which contains 66 wells sites. A "community water system" is a public water system that serves at least five service connections used by year-round residents or regularly serves at least 25 year-round residents.

In the areas that lack a public water supply system, comprehensive water quality testing is conducted for all new subdivisions proposed with private wells. SCDHS also manages a testing program for existing homes with private wells. The program provides comprehensive water quality analysis and makes recommendations to property owners if necessary.

The New York State Department of Health (NYSDOH) recommends annual testing of private wells for total coliform. Similarly, annual water quality testing of private wells for, at a minimum, total coliform, nitrates, total dissolved solids, and pH is recommended by USEPA and the National Groundwater Association (NGWA). SCDHS offers a private well testing program at a nominal cost. More information about the program can be found at: <http://www.suffolkcountyny.gov/Departments/HealthServices/EnvironmentalQuality/WaterResources/PrivateWellWaterTestingProgram.aspx>.

In addition to regulating private and non-community water systems, SCDHS regulates subsurface sewage disposal systems pursuant to Section 760-502, of Article 5 (Sewage Disposal), and Section 760-710 of Article 7 (Water Pollution Control) of the Suffolk County Sanitary Code. Facilities designed and constructed in

compliance with the standards will be in compliance with the Suffolk County Sanitary Code.

The heightened awareness of water quality problems has prompted the Town and numerous agencies and organizations to elevate the need for voluntary and regulatory changes to reduce the introduction of pollutants in groundwater. To assist with sorting out where additions to the public water infrastructure are consistent with the Town's goals, and where other measures are more appropriate, it is recommended that the Town participate in assessment programs and initiatives that achieve the highest level of protection and conservation for public benefit.

#### **Objective 2.1**

**Support the work of the Town of Southold Water Quality Protection and Conservation Committee, which focuses on and promotes the implementation of the water quality and water conservation goals and objectives of the Town.**



Together with agencies and organizations such as SCDHS, SCWA, Long Island Groundwater Research Institute (LIGRI) at SUNY Stony Brook, USGS, and Fishers Island Water Works, the committee works to protect surface and groundwater quality and quantity through assessment, education, and participation.

#### **Objective 2.2**

**Work with SCWA, SCDHS, and Fishers Island Water Works Corporation in developing mandatory groundwater and surface water quality protection measures.**

#### **Objective 2.3**

**Develop Aquifer Protection Overlay Districts Town-wide.**

Protection of groundwater quality is a community responsibility centered on education and participation.

One tool to accomplish the protection of groundwater quality is to develop and implement an Aquifer Protection Overlay Districts (APOD) approach, which would provide guidance to landowners and user groups on how to better protect groundwater. Effective management within an APOD ranges from voluntary changes in homeowner choice to application and disposal of pesticides, herbicides, or fertilizers, and use of land use controls in areas located within sensitive groundwater recharge areas.

#### **Objective 2.4**

**Achieve consistency in Town land use and water source protection through the re-evaluation of zoning including permitted uses in capture zones, wellheads, and surface water (Fishers Island) reservoir contributing areas.**

#### **Objective 2.5**

**Apply the most stringent pollution control measures practicable within 50-year capture zones to community supply wells (SCDHS).**

#### **Objective 2.6**

**Re-evaluate Chapter 215 Sewers and Sewage Disposal of the Southold Town Code.**

The section was adopted in 1983 and an update for applicability and effectiveness in preserving groundwater quality is necessary. The section contains a provision that requires that on-site wastewater disposal systems be inspected and pumped out a minimum of once every three years.

#### **Objective 2.7**

**Evaluate and recommend Best Management Practices for proactive reduction of VOCs capable of entering groundwater and surface waters.**

VOCs are associated with myriad products such as plastics, adhesives, paints, gasoline, fumigants, refrigerants, and dry-cleaning fluids. Although only one VOC (gasoline) was found in Southold sampling of private wells, in 2010 SCWA testing revealed that almost 65 percent of the community supply wells in Suffolk County have susceptibility ratings of medium high, high, or very high for VOCs, while over 35 percent of the wells are rated medium or low.

The most effective method for preventing VOC contamination is to prevent their use or disposal in

locations where they have the ability to enter ground-water or surface waters. The reduction of use of such products is voluntary, albeit necessary, to reduce the introduction of these compounds in groundwater. In surface waters, the reduction of the introduction of the compounds could result in a change of practices at marinas and waterfront uses.

### **Objective 2.8**

#### **Evaluate and recommend Best Management Practices for the proactive reduction of pharmaceuticals and personal care products in groundwater and surface waters.**

Pharmaceuticals refer to prescription and over-the-counter therapeutic drugs and veterinary drugs. Personal care products refer to products used for personal and cosmetic reasons such as soaps, fragrances, and cosmetics. Collectively, these types of pollutants are referred to as PPCPs. PPCPs that are disposed of in septic systems, sewers, or trash have the potential to enter our drinking water and, ultimately, our surface waters. Presently, USEPA has no health standards or guidelines for PPCPs in drinking water and does not require testing.

In 2010, SCWA screened all of their wells for 16 PPCPs and detected Dilantin and Carbamazepine. However, the noted compounds were not found in the wells of Southold Town 2010 or 2011.

### **Objective 2.9**

#### **Work with regulatory agencies to reduce pesticide and herbicide use on residential properties.**

SCDHS classifies pesticides as insecticides, herbicides, and fungicides used to kill or control insect pests and nuisance vegetation that affect crops, turf, residential lawns and gardens, homes, pets, and people.

The Planning Board and the Board of Trustees strive to reduce turf areas through site design. In sensitive areas, non-disturbance buffers are often established to reduce turf areas and the use of pesticides and herbicides to protect surface water bodies; however, impacts to surface and groundwater still occur from pesticide and herbicide use. The Town should work with regulatory agencies in the development and dispersal of Best Management Practices for pesticide and herbicide use in Town.

### **Objective 2.10**

#### **Work with regulatory agencies and the golf course industry to reduce fertilizer, pesticide, and herbicide use in property management.**

Golf courses use significant amounts of fertilizers and, in some instances, pesticides and herbicides. Suffolk County is working with Cornell University and Cornell Cooperative Extension to reduce nitrogen loads from East End golf courses through the development of Best Management Practices to maintain nitrate levels in groundwater at less than 2 mg/L. The use of Best Management Practices to reduce the application of pesticides and herbicides should also be developed.

### **Objective 2.11**

#### **Continue to purchase open space to achieve groundwater and surface water resource protection.**

The purchase of open space for groundwater and surface water protection is one of the most effective tools available. Since 1983, the Town has been active in the purchase of open space properties for many uses including groundwater protection. In addition to the program, the Town's subdivision regulations require that wetlands be set aside as unbuildable land, and that a minimum of 60 percent of the buildable land area be preserved as open space if the parcel is over seven acres. The Town, Suffolk County, and other agencies continue to purchase open space for many functions and values including groundwater recharge.

- A |** Develop an Open Space Valuation Index to evaluate parcels for groundwater (and surface water) quality protection and supply among other ecological benefits.
- B |** Develop a parameter-driven valuation index to assess the public and ecological benefits of each parcel proposed for open space purchase to assist the decision-makers in assessing the functions and values of a parcel.

### **Objective 2.12**

#### **Develop and apply land use tools to preserve Plum Island water quality in the aquifer.**

Consider establishing a Groundwater Conservation District on Plum Island to serve Southold Town's water

supply needs in the future. Under the current ownership, Plum Island water resources are a public asset and management strategies to preserve the quality and volume of groundwater should be developed for potential future public use.

### 🎯 Objective 2.13

#### Support SCWA's Groundwater Guardian Program.



The Groundwater Guardian Program is an international effort by the Groundwater Foundation to educate the public about the value of groundwater. Team members of the Groundwater Guardian Program include SCWA, Citizens Campaign for the Environment, The Long Island Farm Bureau, Stony Brook University, and The Scotts Miracle-Gro Company. Team activities focus on awareness campaigns, pollution prevention, conservation, public policy initiatives, waterway cleanups, and Best Management Practices.<sup>4</sup>

### 🎯 Objective 2.14

#### Work with regulatory agencies and institutions to reduce nitrogen and phosphorous loads to groundwater due to residential fertilizer.

Both the Long Island Sound and Peconic Estuary have experienced detrimental changes from increased nutrient loads to ground and surface waters. In the Long Island Sound, and more recently in the Peconic Estuary, low dissolved oxygen (DO) conditions (hypoxia) develop due to excessive levels of nitrogen (N) and phosphorous (P). Hypoxia is a result of planktonic algae blooms that feed on the nutrients. The algae die and settle to the bottom of the water body then decay, using up DO in the process. The oxygen levels frequently fall below the levels necessary to sustain life and often results in fish and shellfish die offs. Correspondingly, the planktonic algae is also toxic to shellfish and finfish in high densities; this also often results in the death of species.

This problem is not limited to current events. To address the water quality problems in the Long Island Sound, in 1985 USEPA created the Long Island Sound Study (LISS) in partnership with the Connecticut Department of Environmental Protection (CTDEP) and NYSDEC. Years of research, monitoring, and modeling helped the LISS to identify nitrogen sources in the Long Island Sound and the levels of nitrogen control necessary to improve DO levels and meet water quality standards. The analysis led to the adoption of a 58.5 percent nitrogen reduction goal to reduce the extent and duration of hypoxic conditions in the Long Island Sound.

In the Peconic Estuary, after atmospheric deposition, groundwater is estimated as the second largest external source of nitrogen, totaling 41 percent of the total nitrogen load. Groundwater and other nonpoint sources are the primary contributors to water quality degradation of the Peconic Estuary, thereby contributing to algal blooms and hypoxia (SCCWRMP). In 2001, the Peconic Estuary Program adopted the Comprehensive Conservation and Management Plan (PEPCCMP) for the estuary. The plan includes a Nutrient Management Plan that establishes goals and objectives to better manage nitrogen in the estuary.

Recognizing the problem of nitrogen and nitrates loading in ground and surface waters, the Suffolk County Legislature established a goal of reducing fertilization in residential areas by 10 to 25 percent, and passed Local Law 41-2007 to reduce nitrogen pollution countywide. The law states that "the quality of our water should be considered a higher priority than the aesthetics of lawns, and those high maintenance lawns require more nitrogen and are more likely to leach excess nitrogen, so that high maintenance lawns should be discouraged."

Correspondingly, in July 2010, New York State adopted the Dishwasher Detergent and Nutrient Run-off Law to reduce phosphorus loading to its ground and surface waters. On August 14, 2010, the law prohibited the sale of newly stocked, phosphorus-containing dishwasher detergents for household use. On July 1, 2013, the law also prohibited the sale of phosphorus-containing dishwasher detergents for commercial use. The law defines a commercial establishment as "any premises used for the purpose of carrying on or exercising any trade, business, profession, vocation, or commercial or charitable activity, including but not limited to laundries, hospitals, and food or restaurant establishments." More information on the law can be found at the NYSDEC website (<http://www.dec.ny.gov/chemical/74885.html>).

<sup>4</sup> See [https://www.scwa.com/environment/become\\_a\\_groundwater\\_guardian/](https://www.scwa.com/environment/become_a_groundwater_guardian/).

- A |** Develop education programs that discuss the impacts on surface and groundwater of residential fertilizer use and household products that end up in the septic system.
- B |** Use public service announcements and Town media channels and brochures to educate the public about the effects of the use of consumer products on water quality. Include education about existing regulations:
- Lawn fertilizers containing phosphorus are prohibited, except for establishment of new lawns, or if data confirms that phosphorus is required.
  - Application of lawn fertilizers on impervious surfaces is prohibited.
  - Application of lawn fertilizers are prohibited within 20 feet of a surface water body except in cases where a vegetative buffer of 10 feet or more exists, or special application techniques are employed.
  - Application of fertilizer between December 1 and April 1 is prohibited state-wide.
  - Require a maximum of 1lb per 1000 sq. ft./per year of turf application rate.
  - Phosphorus-containing dishwasher detergents for household use are prohibited.
  - Continue to include nitrogen and phosphorus Best Management Practices in subdivision covenant and restrictions.
  - Require the use of native, drought-tolerant vegetation in landscaping.
  - Maximize widths of non-fertilized, vegetated buffers on parcels adjacent to water bodies to minimize turf area and improve water quality protection.

### **Objective 2.15**

**Continue to support education programs that achieve agricultural nitrogen load reductions, to include promoting agricultural Best Management Practices, expanding Agricultural Environmental Management (AEM) strategies, and promoting organic farming, among other initiatives.**

The application of fertilizer and pesticides is necessary in crop farming, a staple in the Town's economy.

In addition to on-site wastewater systems, agriculture remains a source of nitrogen loads to the aquifer. The type of agriculture affects the resulting groundwater

nitrate level, since nitrogen loading can vary considerably depending on crop-specific fertilization requirements. The data shows average nitrogen concentrations in groundwater for row crops at 13.4 mg/L and average nitrogen concentrations in groundwater for vineyards at 5.1 mg/L (SSWRMP).



*Farm in Cutchogue*

The same plan indicates that crop type also has a significant impact on the type and volume of pesticides that are observed in down gradient groundwater. In a past report entitled "Water Quality Monitoring for Pesticides in Nassau & Suffolk County, Vineyard Monitoring Draft Report 2003-2006 (SCDHS)," the fungicide Metalaxyl used on grapes was the most frequently detected compound in monitoring wells. In addition to the low levels of registered pesticides that were detected, low levels of historically applied pesticides and pesticide-breakdown products not associated with vineyard applications were also reported, including Metolachlor, Alachlor, and Aldicarb. It is important to note that many of the pesticides and pesticide-breakdown products detected have been banned in Suffolk County for decades, but are still present in the aquifer system due both to their solubility and persistence in the environment.

Agricultural Stewardship Programs are currently implemented by Suffolk County and the Cornell Cooperative Extension of Suffolk County to improve agricultural Best Management Practices by reducing the amounts of nitrogen and pesticides reaching ground and surface waters. More than 100 local vegetable, nursery, sod, fruit farms, and vineyards are participating in a tiered strategy of AEM practices. The Agricultural Environmental Stewardship 5-Year Program goal is to significantly reduce nitrogen leaching and run-off. More information on the New York State AEM program can be found at <http://www.nys-soilandwater.org/aem/index.html>.

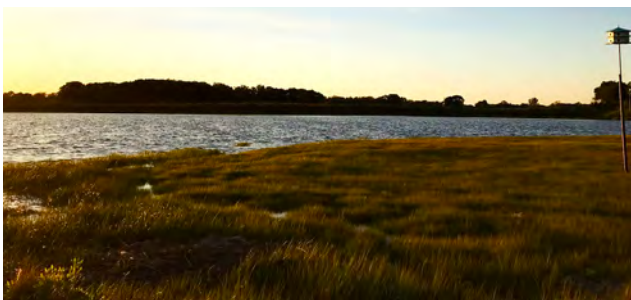
➤ **Responsible Parties:** Southold Town Board, Town of Southold Water Quality Protection Committee,

Fisher Island Water Works, Town of Southold  
Planning Department, Town of Southold Land  
Preservation Department

- **Possible Partnerships:** Suffolk County Water Authority, Suffolk County Department of Health, New York State Department of Environmental Conservation, National Oceanic and Atmospheric Association, U. S. Environmental Protection Agency, other non-governmental agencies, local civic associations

## Surface Water

All of the Town's coastal waters are assigned a classification by NYSDEC based on best usage of a particular water body. The classifications set attainment goals and discharge standards for point sources, but do not necessarily indicate existing water quality conditions. Most coastal waters in the Town are classified as SA. The SA designation indicates that the primary use of the water body is shell fishing for market purposes, primary and secondary contact recreation, and fishing. These waters are suitable for fish propagation and survival (LWRP). By classifying waters as SA, NYSDEC has set a management goal to achieve a level of water quality capable of supporting shellfish harvesting. This does not imply that waters so designated are always considered harvestable. Although much of Southold's coastal waters are classified as SA, many of these same water bodies are not certified for direct market harvesting of shellfish due to the seasonal occurrence of pathogens.



*Creek in New Suffolk*

The classification is also important from an ecological and economic standpoint because healthy, productive waters support tourism and marine uses. Town departments and numerous organizations work to retain high quality surface waters through local laws, the Local Waterfront Revitalization Program, the Peconic Estuary Comprehensive Conservation and Management Plan, and the Long Island Sound Study.

## Goal 3: Protect Surface Water Quality

**There are many challenges to protecting the quality of our creeks, bays, and other surface waters.**

Although today there are more regulations in place for protection of surface waters than in the past, the increased number of potential sources of pollution necessitates vigilance. The Town's economy and quality of life are inextricably tied to its coastal waters being clean and productive for many uses including swimming, fishing, shell fishing, and boating.

### Objective 3.1

**Continue to implement the goals and objectives of the LWRP, Peconic Estuary Program (PEP) CCMP and LISS to address target issues on surface water quality.**

The Town Code and LWRP goals and policies support the long-term protection of Peconic Bay, Gardiners Bay, and Long Island and Block Island Sound. Additionally, they reflect existing laws and authority regarding development and environmental protection, including that of the PEP CCMP and the LISS. Taken together, the goals and policies and their associated standards are used to determine the appropriate balance between development and preservation that will prevent adverse effects on Southold's coastal resources. Southold Town can further these policies through the participation and implementation of the plans. More information on the Peconic Estuary and Long Island Sound Study can be found in **Appendix 4**.

### Objective 3.2

**Continue to participate and support the Peconic Estuary Protection Committee to implement the Municipal Separate Stormwater System (MS4) Program.**



NYSDEC regulates stormwater discharges in the Town under the New York State Pollutant Discharge Elimination System (SPDES) Permit for Discharges from Municipal Separate Storm Sewer Systems (MS4s)

GP-0-015-003 (MS4 General Permit). The MS4 General Permit regulations establish a number of required planning, legislative, and implementation actions that the Town must continue to implement. The program is designed to reduce overall pollutant loads to water bodies. The MS4 General Permit requires that the Town accomplish these efforts based on six Minimum Control Measures: public education and outreach, public involvement, illicit discharge detection and elimination, construction site stormwater control, post-construction stormwater management, and pollution prevention for municipal operations.

The challenges of managing stormwater are complicated and diverse. Infrastructure ownership, age, and funding all pose issues that the Town will need to address as it meets regulations. As sea levels rise, the challenges will become even more difficult.

Since its inception, the New York Sea Grant Program and the PEP have spearheaded the formation of a coalition to manage stormwater and meet regulations. This effort led to the formation of the Peconic Estuary Protection Committee in 2015, which includes the New York State Department of Transportation (NYSDOT), Suffolk County, and all of the towns and villages within the Peconic Estuary Watershed. Participation in this coalition has saved the Town money and strengthened its MS4 program through the sharing of information and resources.

It is recommended that the Town continue to participate in the Peconic Estuary Protection Committee, Sea Grant and the PEP to achieve greater understanding of and compliance with the MS4 General Permit requirements, including net reductions in nitrogen and pathogen loading to water bodies and seek state and federal funding for remediation projects.

### **Objective 3.3**

**Increase understanding and awareness of the potential impacts of stormwater pollution and activities that contribute to water quality impairments through public education efforts.**

The Town has worked closely with the PEP and other environmental organizations in producing educational initiatives on the impacts of stormwater. The Town will continue to work with the PEP in the development of Best Management Practices to further the MS4 Program and natural resource protection. Best Management Practices will be developed for:

- Development and construction
- Stormwater runoff
- On-site wastewater treatment
- Boats and marinas
- Agriculture
- Protecting groundwater quality

### **Objective 3.4**

**Minimize illicit discharges into surface waters.**

Southold Town Code Chapter 236 *Stormwater Management* defines illicit discharge as including but not limited to “discharge of solid waste, human and animal waste, antifreeze, oil, gasoline, grease and all other automotive products, flammable or explosive materials, metals in excess of naturally occurring amounts, whether in liquid or solid form, chemicals not normally found in uncontaminated water, solvents and degreasers, painting products, drain cleaners, commercial and household cleaning materials, pesticides, herbicides, fertilizers, acids, alkalis, ink, steam-cleaning waste, laundry waste, soap, detergent ammonia, chlorine, chlorinated swimming pool or hot tub water, domestic or sanitary sewage, roof structure runoff, animal carcasses, food and food waste, yard waste, dirt, sand, and gravel. Illicit discharges include any direct or indirect discharge to the MS4, except as exempted in §236-25A (discharge prohibitions) and/or as permitted by the Town.”

The Town has always striven to control and prevent illicit discharges capable of impairing water quality. The Town has made significant advances in water quality protection with the passing of a Stormwater Management Law in 2007 and a revised Stormwater Management Law in 2012. Also in 2012, the Town Board revised Chapter 83 *Animals* to include better management of domestic pet waste. These regulations include Best Management Practices that aim to reduce pollutant loads into water bodies. Efforts to identify and rectify sources of illicit discharges will continue to protect and restore surface waters.

### **Objective 3.5**

**Avoid and minimize non-point pollution of coastal waters.**

Non-point pollution is defined as “pollution from any source other than from any discernible, confined, and discrete conveyances and shall include, but not be limited to, pollutants from agricultural, silvicultural,

mining, construction, subsurface disposal, residential, commercial and urban run-off sources.” To address non-point pollution, the Town is working to integrate green infrastructure into drainage designs. For example, the Planning Board is requiring the use of constructed swales and vegetated retention areas to treat stormwater in subdivisions and site plans. In addition, efforts to reduce pollutant loads to coastal waters by managing unavoidable non-point sources and by using appropriate Best Management Practices as determined by use, site characteristics, design standards, operational conditions, and maintenance programs are being implemented.



*Parking lot in Mattituck*

One of the most influential sub-surface structures that contributes pollutants to surface waters is conventional septic systems. The SCWA indicates that the majority of Suffolk County residents are dependent on these systems to dispose of sanitary waste; however, these systems are discharging nitrogen into the groundwater. In addition, the treatment of PPCPs are becoming problematic in groundwater as a result of their disposal in these systems.

Septic systems are required to be up-graded to newer technology on a case-by-case basis typically prompted by new construction or renovation of structures. Otherwise, septic systems are not generally monitored for proper function, and many substandard systems remain in use. Better management and monitoring of these systems is necessary to minimize impact to ground and surface waters.

Advances in wastewater treatment technology have resulted in a concerted effort to reduce total nitrogen discharged in wastewater to below 19mg/L using Innovative and Alternative Onsite Wastewater Treatment Systems (I/A OWTS). The Town has participated in this effort with SCDHS and encourages the

use of these systems. Further, discretionary boards may require the use of the systems where groundwater and surface waters are vulnerable to contamination.

- A** | Avoid non-point pollution by limiting non-point sources capable of entering coastal waters.
- B** | Reduce or eliminate introduction of materials that may contribute to non-point pollution.
- C** | Avoid activities that would increase off-site stormwater run-off and transport of pollutants.
- D** | Retain or establish native vegetation to maintain or provide soil stabilization or filtering capacity in littoral zones.
- E** | Preserve natural hydrologic conditions maintaining natural watercourses and drainage systems where present.
- F** | Where drainage systems are absent or incapable of handling the anticipated run-off demands:
  - 1** | Develop open vegetated drainage systems as the preferred approach and design these systems to include long and indirect flow paths and to decrease peak run-off flows.
  - 2** | Use closed drainage systems only where site constraints and stormwater flow demands make open water systems infeasible.



- G** | Site, upgrade, and manage on-site disposal systems to achieve maximum pollutant control through the integration and required use of I/A OWTS or future technologies that reduce or eliminate nitrogen from wastewater.
  - 1** | Allow on-site disposal systems only when impractical to connect with a public sewer system.

- 2 | Protect surface and groundwater against contaminants and other pollutants by keeping septic effluent adequately separated from groundwater.
  - 3 | Work with an institution to develop and implement a pilot program whereby waterfront residents can volunteer to have dye tests done on their septic systems to determine if the systems are constructed properly.
  - 4 | Require that systems located in critical lands, within the SGPA, or in soil groups with severe limitations for sewage disposal be pumped out once every three years.
  - 5 | Require the use of I/A OWTS or future technologies to achieve the highest level of effluent treatment attainable in new construction projects.
  - 6 | Set a benchmark for systems using new technology to less than 5 mg/L of nitrogen located within the Town.
  - 7 | Require the use of I/A OWTS or future technologies to achieve the higher level of effluent treatment attainable on the re-development of parcels.
  - 8 | Consider approaching New York State to implement a Personal Income Tax Credit for replacement of a failed cesspool or septic system modeled after The State of Massachusetts Program.
- H |** Encourage new marina uses to participate in the National Oceanic and Atmospheric Administration (NOAA) Clean Marina Initiative.

The Clean Marina Initiative is a voluntary, benefit-based program promoted by NOAA and others that encourages marina operators and recreational boaters to protect coastal water quality by engaging in environmentally sound operating and maintenance procedures. Marinas that participate in the Clean Marina Program are recognized for their environmental stewardship.

- **Responsible Parties:** Southold Town Board, Town of Southold Planning Department, Town of Southold Board of Trustees, Town of Southold Agricultural Advisory Committee
- **Possible Partnerships:** Town of Southold Stormwater Committee, Suffolk County Water Authority, Suffolk County Department of Health, New York State Department of Environmental Conservation, National Oceanic and Atmosphere

Association, U. S. Environmental Protection Agency, other non-governmental agencies, local civic associations

## **Goal 4: Improve Watershed Management**

**Continue to proactively assess the impacts of development in each watershed.**

The Town is comprised of distinct watersheds. Historically, the Town has addressed land use challenges as they occurred within each watershed; however, in recent years a proactive approach to assess the impacts of development in each watershed has been implemented.

The Town will continue to model, map, and plan each watershed to improve knowledge of existing conditions in each watershed and develop a framework for pragmatic decision-making to address land use challenges. Within each watershed/sub-watershed the Town will also continue to delineate and map sewer-sheds (an area where stormwater enters one of the Town's stormwater control structures) to comply with New York State MS4 requirements.

### **Objective 4.1**

**Update and conduct a needs analysis on the recommendations made in the Mattituck Watershed Study (2009).**

Due to the age of the study, it is recommended that a needs analysis be conducted on the recommendations included in the plan to determine applicability and create updated implementation strategies.

### **Objective 4.2**

**Continue to implement the Goldsmith Inlet, Hashamomuck Pond, and Jockey, Town, Goose and Richmond Creeks Watershed and Subwatershed Management Plans.**

The Town has partnered with the local citizens, Suffolk County, and New York State to fund, assess, plan, and implement a restoration plan that addresses water quality, invasive species, sedimentation, and debris within Goldsmith Inlet.

In addition, the Town has partnered with the PEP and New York State to create a Subwatershed Management Plan for Hashamomuck Pond. In 2011/2012, three stormwater retrofit projects were constructed to

mitigate stormwater impacts to the water body under this plan. The Town will continue to implement the plan and address stormwater control and water quality issues in the watershed.

### 🎯 Objective 4.3

#### **Develop Watershed Management Plans for all remaining watersheds.**

The tasks necessary to manage watersheds are complex ranging from land use planning to engineering and community involvement. It is recommended that the Town Board form a Watershed Planning Management Team to oversee implementation and tracking, and indicate how stakeholders and partners will be involved.

### 🎯 Objective 4.4

#### **Limit the potential for adverse cumulative impacts of watershed development on water quality and quantity.**

Protect water quality by ensuring that proposed expansion or intensification of existing watershed development results in:

- Protection of areas that provide important water quality benefits;
- Maintenance of natural characteristics of drainage systems, and
- Protection of areas particularly susceptible to erosion and sediment loss.

➤ **Responsible Parties:** Southold Town Board, Town of Southold Planning Department, Watershed Planning Management Team

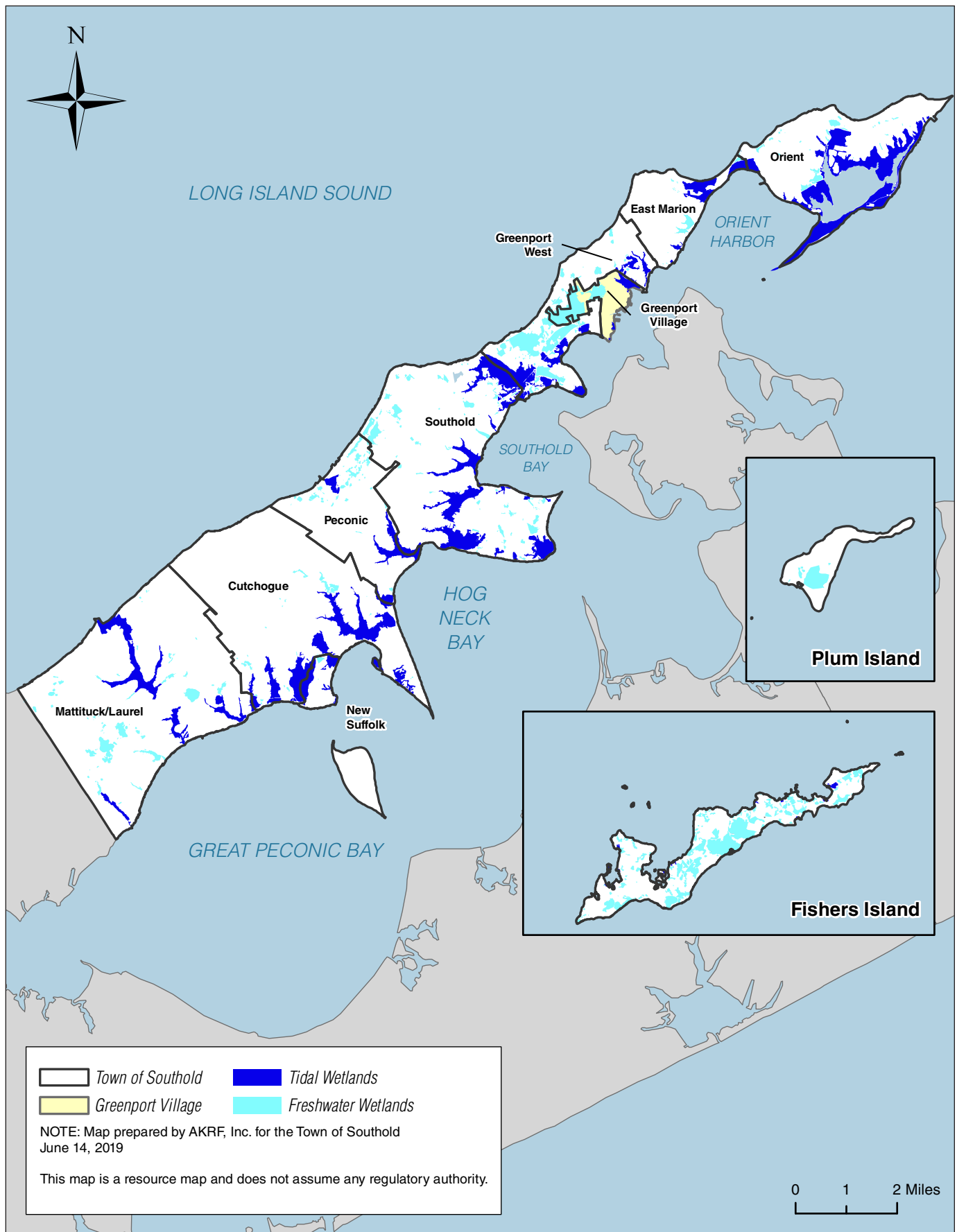
➤ **Possible Partnerships:** Town of Southold Land Preservation Department, National Oceanic and Atmosphere Association, U. S. Environmental Protection Agency, other non-governmental agencies

## 🎯 Goal 5: Protect Freshwater and Marine Habitats

### **NYSDEC regulates tidal and freshwater wetlands at the state level pursuant to Article 24 and Article 25 of the Environmental Conservation Law.**

In addition to State regulations, some of Southold's wetlands are protected under the Federal Clean Water Act, Riverhead Harbors Act of 1899, the U.S. Army Corps of Engineers (USACE) Title 33, U.S. Environmental Protection Agency, Section 404 Permit Program. These wetlands have been identified in the National Wetlands Inventory and can include wetlands as small as one acre. The federal wetlands are defined by three criteria: type of vegetation, period of inundation, and presence of hydric soils, whereas the state-designated wetlands are defined by vegetation only. More information on the Town's classification of wetlands can be found in **Appendix 4**. In 2002–2003 the Town Planning Office mapped both tidal and freshwater wetlands in the Town (see **Figure 6.4**).

Any proposed development activities near these wetland systems require permits from both the NYSDEC Bureau of Environmental Protection (for freshwater wetlands) and the Southold Board of Trustees.

**Figure 6.4 Southold Town: Tidal and Freshwater Wetlands**

### 🎯 Objective 5.1

#### Identify, protect and enhance quality of coastal habitats.

Wetlands within Southold Town are critical natural resources that provide benefits including open space, habitat for fish and wildlife, water quality enhancement, flooding and erosion protection, scenic value, and opportunities for environmental education. Over the years, many wetland areas have been lost or impaired by degradation or functional loss.

Wetlands and their benefits are also dependent on the condition of adjacent lands that provide buffers between wetlands and surrounding uses. Large areas of adjacent lands that previously provided a buffer for wetlands have been physically lost to development or functionally lost through changes in land use, including inappropriate or incompatible landscaping. These losses and impairments to the wetlands and their functions cumulatively have impacted the Town's ecosystem.

Protecting and improving the remaining tidal and freshwater wetlands and restoring lost or impaired wetlands are the most appropriate ways to achieve an increase in quality and quantity of wetlands. Historical losses and alterations, which have occurred in many locations in Southold, present numerous opportunities for restoration.



*Goldsmith Inlet*

In addition to protecting and improving the Town's wetlands, adjacent lands that provide buffers to wetlands must be maintained and enhanced, and where appropriate, re-established. These buffers are necessary to ensure the long-term viability of the Town's wetlands. Where these lands are in private ownership, educating residential owners as to the long-term benefits of compatible land use and

landscaping techniques will be essential to maintaining the ecological health of some wetland areas.

The Town recognizes the value of wetlands to its ecosystem, its economy, and its aesthetic character. It also recognizes that federal and state regulations concerning wetlands do not fully cover local conditions, and in some cases, are less restrictive than local regulations. The Town Board of Trustees has local expertise in the management of the Town's wetlands and in this capacity espouses a "no net loss" of wetlands policy, as advocated by NYSDEC (LWRP).

- A |** Continue to identify and protect environmentally sensitive wetland and coastal resources, including marine habitats and species on Fishers Island and surrounding waters.
- B |** Develop Harbor Management Plans for Town water bodies, update Fishers Island West Harbor Management Plan.

### 🎯 Objective 5.2

#### Protect tidal and freshwater wetland habitats.

- A |** Continue to achieve a "no net loss" policy of tidal and freshwater wetlands.

Since 2002, tidal and freshwater wetlands have been mapped at the Town level. It is recommended that the wetland map be updated to the greatest extent practicable and that the Town Board and Board of Trustees adopt a "no net loss" of wetland systems. No net loss is a mitigation policy goal aiming to prevent and offset the destruction or degradation of wetlands. Under this policy, wetlands currently in existence should be conserved if possible through a coordinated effort of:

- Wetlands protection
- Creation of new wetlands
- Restoration, enhancement, and management
- Education, research, and information

This policy would apply to the jurisdictional boundary of a wetland system itself, exclusive of the regulatory buffers.

- B |** Develop "Dredging and Spoil Deposition Guidelines" to prioritize and dredge Town inlets to allow for critical tidal flushing of water bodies and habitat restoration.

Dredging of water bodies is a necessary event for many of the creeks/harbors to improve access and sustain marine uses that support the local economy.

Responsible dredging is also necessary to support ecological processes in estuarine environments.

Dredging in Southold Town is overseen by USACE, NYSDEC and accomplished in partnership with Suffolk County Department of Public Works (SCDPW). The timing of dredging for most of the Town's water bodies revolves around winter flounder spawning and shorebird migration. Dredging can be conducted when the species have migrated south, usually between September 15 and December 15. The dates are established by NYSDEC for the water bodies.

Dredging in areas not maintained by the federal government or SCDPW must be performed through private contracts. Generally, homeowners' associations or other private individuals retain private contractors to perform the dredging. All dredging actions require approval from the Board of Trustees through the issuance of a permit pursuant to Chapter 275 of the Town Code in addition to applicable state and federal permits.

In response to unsuccessful dredging requests made to NYSDEC and USACE, the Town Board established the Dredging Advisory Committee in 2012 to monitor the process of dredging applications by and to other government entities relative to waterways within the Town and report to the Town Board and Southold Board of Trustees the status of such applications. It is recommended that Dredging and Spoil Deposition Guidelines be developed taking into account available information e.g., the Dredge Site Habitat Assessment (2012) conducted by the Group for the East End.

- C** | Work with SCDPW, NYSDEC and USACE to achieve a more streamlined process for dredging applications.
- D** | Support efforts that study the positive and negative impacts of dredging on marine species.
- E** | Support efforts that study the positive and negative impacts of the placement of dredge spoil on shorebird species e.g., slope of dredge spoil on beach.
- F** | Protect water quality of coastal waters from adverse impacts associated with excavation, fill, dredging, and disposal of dredged material.
- G** | Work with USEPA, USACE, New York State, and other involved parties to immediately cease the dumping of dredge spoil in Long Island Sound/Fishers Island Sound, specifically at the New London and Cornfield Shoals sites.



*Kenney's Beach, Southold*

- H** | Provide adequate buffers (in width and composition) between wetlands and land uses and activities to ensure protection of the wetland's water quality, functions, and values.

Vegetated buffers located adjacent to wetlands provide water quality protection and groundwater recharge, reduce amount and velocity of run-off, provide flood and storm surge protection, and wildlife habitat. Vegetated buffer widths from 50 to 100 feet are typically recommended to protect water quality and buffers widths of 100 to 350 feet or more are recommended to provide important wildlife functions.

Buffer widths as proposed in **Appendix 4** assumes that a buffer is vegetated with a native plant community necessary to provide adequate buffer functions. If a buffer (existing or otherwise) is unvegetated, sparsely vegetated, or dominated by invasive species, the buffer should be enhanced with appropriate native species or widened. It is important to note that improving buffer vegetation (species composition and percent cover) is more effective in maintaining and/or enhancing buffer values and functions than widening the buffer. Consequently, the concept of reducing buffer widths in exchange for enhancement through the planting of native vegetation is supported by the best available science and is the most practicable approach for the Town based on the many smaller lots that occur along our shorelines. Recognize, however, that buffers should be designed to achieve the highest level of effectiveness while conforming to the limitations of parcel configuration and use.

- 1** | Design and establish new buffers using existing vegetation (in its natural state) wherever possible, while allowing for appropriate

maintenance. Where no vegetation exists, require re-vegetation of a buffer area with native, drought-tolerant vegetation.

- 2 | Restore degraded buffers through re-establishment of native, drought-tolerant vegetation.
- 3 | Maintain densely vegetated buffers to achieve high filtration of surface runoff.
- 4 | Provide adequate buffers (in width and composition) to abate storm surge resulting from hurricane/storm events.
- 5 | Amend buffer definitions in the Southold Town Code to achieve consistency between Chapters 275 Wetlands and Shorelines and Chapter 268 Coastal Consistency Review and establish minimum design standards.
- 6 | Partner with local institutions to develop optimum buffer designs to achieve the highest effectiveness practicable.
  - a | Incorporate a fecal coliform bacteria sand trap in buffer design coupled with high-density vegetation.
  - b | Incorporate in buffers drought-tolerant, vegetation that waterfowl do not eat.
- 7 | Exempt residential actions from LWRP coastal consistency review that include minimum wetland buffer widths in design, as indicated in **Appendix 4**.

### **Objective 5.3**

#### **Restore tidal and freshwater wetlands habitats to foster their continued existence as natural systems.**

The wetlands in Southold Town have experienced and continue to experience impacts from human disturbance. This includes construction of docks and bulkheading, filling and dredging, removal of vegetation, impacts from adjacent land uses, and impacts resulting from recreational activities, such as fishing, hunting, and boating. The degree of impact depends on the nature and scale of human activity within or adjacent to the wetlands (LWRP).

- A | Restore former wetlands in areas adjacent or contiguous to the site according to the following priorities:
  - 1 | Where restoration of former wetlands in areas adjacent or contiguous to the site is not appropriate or practicable, restore former wetlands in close physical proximity and in the same watershed, to the extent possible.

- 2 | Where restoration of former wetlands is not appropriate or practicable, create new wetlands in suitable locations as determined by sediment, exposure, shoreline characteristics, and water regime.

Include consideration of loss of resource values that may exist at the mitigation site.

- 3 | Where wetlands are restored or wetlands created:
  - a | Provide equivalent or greater area of mitigation wetland. Base the actual area of wetland provided on the following factors: characteristics of the mitigation site, proposed wetland creation or restoration methods and designs, and quality of the wetland restored or created relative to the wetland lost.
  - b | Provide equivalent or greater value or benefit to that of the wetland area lost, as defined by class of freshwater wetland, as ranked in 6 New York Codes, Rules, and Regulations (NYCRR) Part 664 or, tidal wetland zones, as described in 6 NYCRR Part 661.
  - c | A lesser area of mitigation wetland may be allowed in cases where the mitigation wetland and its benefits would clearly be a greater value than the wetland lost.
  - d | Guarantee success of the compensatory mitigation. Wetland mitigation is considered successful if functional attributes of the wetland have been reached and maintained, including a plant density that approaches the design density.
  - e | When a series of small, unavoidable wetland losses requires mitigation, combine mitigation projects to create larger contiguous wetland areas whenever the resulting ecological value would be greater than that achieved through pursuing discrete, separate efforts.

### **Objective 5.4**

#### **Promote sustainable use of marine habitats and resources in Southold Town.**

- A | Zone marine underwater lands to insure ecological quality and sustainability of public underwater lands and waters

- B |** Preserve ecological quality and public access to lands and waters by managing private docks in Peconic Bay and Gardiners Bay.

Private docks that extend into and over public waters hinder and impede public access to waters and along the shoreline. Navigational hazards could also result from docks. Correspondingly, adverse ecological impacts that may occur from private docks include loss of seagrass (Fishers Island) and degradation of water quality.

The Town's goals and policies support the long-term protection with consideration of the economic and cultural associations afforded by Peconic Bay and Gardiners Bay. Additionally, they reflect existing laws and authority regarding development and environmental protection. Taken together, these goals and policies and their associated standards are used to determine the appropriate balance between development and preservation that will prevent adverse effects on Southold's coastal resources. The Town can further these policies through the adoption of technical design standards that prohibit and/or manage the dock structures within these sensitive public areas. Correspondingly, with any effort to minimize impacts from dock structures, it is strongly recommended that the Town develop a Mooring Management Plan for affected waters.

- C |** Preserve ecological quality of public lands and waters by reducing the density of future dock structures in Town creeks and/or water bodies through the establishment of common easements and common docks.

- D |** Mitigate impacts to public lands and waters through the establishment of a bottomlands lease fee (e.g., in five-year intervals) for docks located on Town bottomlands.

Use fees to establish shellfish spawning sanctuaries/seeding programs and habitat restoration.

- E |** Manage the number of future permanent docks in Town creeks using alternative and seasonal moorings.
- F |** Amend the Fisher Islands Harbor Management Plan and Chapter 157 Harbor Management of the Southold Town Code.

This will afford better protection of marine water quality and give the Fishers Island Harbor Committee better tools with which to implement the plan.

- **Responsible Parties:** Southold Town Board, Southold Board of Trustees, Southold Planning Board, Fishers Island Harbor Committee, Dredging Advisory Committee
- **Possible Partnerships:** Town of Southold Conservation Advisory Council, Southold Zoning Board of Appeals, Town Committees, Southold Town Economic Development Committee, Southold Land Preservation Department and Committee, New York State Department of Environmental Protection, U.S. Fish and Wildlife Service, Suffolk County Department of Public Works, other non-governmental agencies

## LAND RESOURCES

The historic development patterns of the Town evolved around the vast areas of prime agricultural soils and environmentally sensitive soils.

Historically, residential and commercial development patterns were clustered in the hamlet centers and adjacent to water bodies, allowing for large contiguous areas of farmland. As the population increased, residential and commercial development began to sprawl from the hamlet centers to areas along the main roadways and areas within the watersheds. This expansion, coupled with improved farming technologies, allowed higher crop yields on less acreage resulting in more efficient and smaller farms. Beginning in the late 19th century and continuing to the present, there has been increasing demand for land to build seasonal homes. Farmland was converted to residential uses, which gradually reduced the amount of agricultural soils. Soil conservation practices are imperative if the Town's agricultural uses dependent upon quality soils are to be continued.

The Soil Survey of Suffolk County, New York (Warner et al., 1975) maps and describes soil types found in the Town.<sup>5</sup> Soils are classified by similar characteristics into soil series, which are in turn grouped into associations. Dominant soil associations within Southold Town include Carver-Plymouth-Riverhead, Haven-Riverhead, and Duneland-Tidal Marsh-Beach Association soils. Soil capability groups, as defined in the 1975 Soil Survey,

<sup>5</sup> See [https://www.nrcs.usda.gov/Internet/FSE\\_MANUSCRIPTS/new\\_york/suffolkNY1975/suffolk.pdf](https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/new_york/suffolkNY1975/suffolk.pdf).

are used to identify prime agricultural soils and Soils of Statewide Importance within Southold.

The group identified as Prime Agricultural Soils includes soils with Land Capability Class I and II meaning they have the best combination of physical and chemical properties for the production of crops. Soils included in these classes are:

- Haven loam, 0 to 2 percent slopes, (HaA) - Capability Unit I-1
- Haven loam, 2 to 6 percent slopes, (HaB) - Capability Unit IIe-1
- Haven loam, thick surface layer - Capability Unit IIw-2
- Plymouth loamy sand, silty substratum, 0 to 3 percent slopes, (PsA) - Capability Unit IIs-1
- Riverhead sandy loam, 0 to 3 percent slopes (RdA) - Capability Unit IIs-1
- Riverhead sandy loam, 3 to 8 percent slopes (RdB) - Capability Unit IIe-2
- Scio silt loam, till substratum, 2 to 6 percent slopes (ScB) - Capability Unit IIe-1
- Scio silt loam, sandy substratum, 0 to 2 percent slopes (SdA) - Capability Unit IIw-1
- Scio silt loam, sandy substratum, 2 to 6 percent slopes (SdB) - Capability Unit IIe-1
- Sudbury sandy loam (Su) - Capability Unit IIw-1

Soils of Statewide Importance include soils in land capability class II and III that do not meet the criteria as Prime Farmland soils. These soils can produce high yields of crops when managed.

## GOAL AND OBJECTIVES

### Goal 1: Protect Soils and Geologic Features



#### Objective 1.1

##### Protect Agricultural Soils from Conversion to Other Land Uses

- A |** Continue to preserve Prime Agricultural Soils and Soils of Statewide Importance for agricultural purposes through land preservation tools.

The preservation of important agricultural soils through the purchase of development rights has been very successful. In most situations, the soils that comprise the property remain intact and continue to be farmed. This program preserves the

soils by preventing development other than agriculture from occurring on the parcel.

- B |** Continue to preserve Prime Agricultural Soils and Soils of Statewide Importance through the development design process.

- 1 |** Reduce the loss of Prime Agricultural Soils and Soils of Statewide Importance to development through clustering of residential density.

Through the subdivision design process of clustering, a land use tool that allows the Planning Board to cluster residential lots to a specified area, the Town attempts to avoid areas of prime agricultural soils when locating residential lots. Nevertheless, the subdivision of land still contributes to the incremental loss of viable agricultural soils.

- 2 |** Avoid Prime Agricultural Soils and Soils of Statewide Importance in development to achieve large contiguous assemblages.

- C |** Expand uses on Prime Agricultural Soils and Soils of Statewide Importance that will not decrease the productivity of such soils.

The preservation of prime agricultural soils in Southold has been largely attributed to the continued practice of farming; however, as farming practices evolve, the Town must adapt and expand the types of permitted uses and opportunities on farmland to promote the continued use of prime agricultural soils by farmers (see Chapter 9, "Agriculture," for related information).

### **Objective 1.2**

#### **Avoid environmentally sensitive soils in the development design process.**

In addition to prime agricultural soils, the Town also contains environmentally sensitive soils typically associated with wetlands and tidal marsh areas. These soils are comprised of 10 soil groups including Atsion, Berryland, Canadice Silt Loam, Muck, Raynham, Scio, Sudbury, Walpole, Wareham, and Tidal Marsh Soils. These soil types have characteristically seasonal high water tables that are indicative of wetland and tidal marsh areas. Large areas of these soils occur in Orient and Greenport. They pose numerous problems when developed, including sanitary system failure and flooding. Development of these areas should be avoided.

### **Objective 1.3**

#### **Continue to work with the Natural Resource Conservation Service in soil conservation practices.**

The Planning Board can request a Soil and Water Conservation Plan for subdivisions and other actions clearing equal to or greater than 10 acres. To accomplish this at little cost to the applicant, the Board refers applicants to the Natural Resource Conservation Service.

### **Objective 1.4**

#### **Preserve the unique geologic features of the Town through avoidance and/or minimization of impacts from development and natural disasters.**



*Coastal erosion bluff collapse*

Geologic features of the Town include protected natural features such as beaches (including large boulders), bluffs and dunes, and unregulated, but important, natural features such as soils. These features are threatened on a daily basis from storms, flooding, wind, and erosion. Development of uplands also contributes to loss of these features.

The glacial outwash plain, which makes up approximately 90 percent of the Town's land area, lies directly south of the northern coastal bluffs. This outwash plain has an average elevation of 50 feet above mean sea level and is characterized by low hills and gentle slopes.

Wet, low-lying lands are prevalent adjacent to nearly every creek, inlet, and pond within the Town. In addition, three significant freshwater bodies—Marratooka Lake, Laurel Lake and Great Pond—lie within the Town's coastal area. Saltwater wetlands are prevalent along the edge of Long Beach Bay, the Orient Causeway, and Hashamomuck Pond. Numerous, small, freshwater

ponds and wetlands are found behind the bluffs along the Long Island Sound from Mattituck to Orient.

Fishers Island, Robins Island, and Plum Island are the products of the same glacial history as mainland Southold. All are characterized by irregular topography and steep bluffs. Robins Island has inland elevations of up to 80 feet and steep 60-foot bluffs along 75 percent of its coastline. In comparison, Fishers Island is more than seven times as large as Robins Island, and has inland elevations of up to 117 feet, with frequent stretches of steep bluff. The central portion of Fishers Island contains four significant freshwater ponds as well as large expanses of wet, low-lying land (LWRP). Plum Island, with a maximum elevation of 101 feet, contains bluffs, beaches, dunes, and low-lying wetland areas.

- A |** Avoid significant geologic features through the development design process.

In addition to the State and local regulations that protect protective natural features (beaches, bluffs, and dunes) the Town has adopted a design process that strives to avoid geologic features through the clustering of homes in the subdivision design process.

- B |** Engineer solutions to protect significant geologic features from loss due to erosion resulting from natural disasters.

Erosion is a natural process; however, the unique geologic features along the coastline such as beaches, bluffs, interdunal swales, and primary and secondary dune systems provide vital protection to structures from storm surge events. In recent years, the intensity of such storms has increased, causing accelerated rates of erosion and loss of the Town's infrastructure and private property. These threats have prompted the Town's resource management approach to adapt, shifting ideology from reducing areas of hardened shorelines to the need to harden shorelines in critical areas to protect property. The engineering and materials used to harden shorelines has also shifted, focusing on natural materials (boulders or a mix of boulders and vegetation) that are less likely to fail in high-energy storms. The Town will support the design and development of alternative, natural, erosion control structures to mitigate erosion.

- **Responsible Parties:** Southold Planning Board, Southold Board of Trustees
- **Possible Partnerships:** Suffolk County Soil and Water Conservation Service, Town of Southold Land

Preservation Department and Committee, Town of Southold Conservation Advisory Council, New York State Department of Environmental Conservation, U.S. Army Corps of Engineers

## 🎯 Goal 2: Protect Upland Habitats and Trees



*Fishers Island Parade Ground | Photo: Jane Ahrens*

### 🎯 Objective 2.1

**Preserve and manage the Town's grasslands, old field, and woodlands habitats to achieve the highest ecological quality and species diversity.**

Southold's diverse upland communities can be generally grouped as follows:

- Woodlands (Mixed Hardwood, Pine, Maritime)
- Agricultural Fields
- Old Field/Grasslands
- Maritime Habitats (Grasslands, Dunes)

The challenges of managing upland habitats include managing user groups, habitat, and wildlife management to deter nuisance animals (deer, geese) and invasive species, sustaining recreation uses, conserving strategic habitat complexes to support protected species, and protecting upland areas for groundwater recharge and water quality buffers.

### 🎯 Objective 2.2

**Protect and restore upland habitat ecological quality by adhering to the following measures:**

- A |** Retain and add indigenous plants to maintain and restore values of upland ecological communities.
- B |** Protect existing indigenous plants from loss or disturbance to the extent practical.

- 1 | Include the use of suitable indigenous plants in the landscaping plans for new development and in redevelopment projects where loss or disturbance of existing indigenous plants could not be prevented during construction.
- 2 | Avoid fragmentation of upland ecological communities and maintain corridors to facilitate the free exchange of biological resources within and among communities.
  - a | Maintain individual resource areas as complete contiguous areas to protect natural resource values. Specifically, actions that would fragment the upland ecological community into separate ecological islands should be avoided.
  - b | Where fragmentation of upland ecological communities has already occurred, mitigate the adverse effects of fragmentation by maintaining or providing connecting corridors to allow the exchange of biological resources.
- C | Avoid permanent adverse change to ecological processes that provide values to the residents of the Town and the region. Examples of the natural processes that need to be protected are:
  - 1 | Clean recharge of stormwater to the aquifers and surface waters.
  - 2 | Natural storm and flood mitigation by maintaining the floodplain and tidal wetlands in the natural state.
  - 3 | Maintenance of breeding, nesting, and foraging habitat for wildlife and fish.
- D | Reduce adverse impacts on upland habitats due to development.
- E | Mitigate impacts of new development where avoidance of impacts is not practicable.

Mitigation includes:

- 1 | Avoidance of potential adverse impacts, including:
  - a | Avoiding ecologically sensitive areas
  - b | Scheduling activities to avoid vulnerable periods in life cycles or the creation of unfavorable environmental conditions
  - c | Preventing fragmentation of intact upland habitat areas.

- 2 | Minimization of unavoidable potential adverse impacts, including:
  - a | Reducing scale or intensity of use or development
  - b | Designing projects to result in the least amount of potential adverse impact
  - c | Choosing alternative actions or methods that would lessen potential impact
- 3 | Specific measures designed to protect habitat values from impacts that cannot be sufficiently avoided or minimized to prevent habitat destruction or significant habitat impairment.

- F | Develop a Stewardship Management Plan for native warm season grasslands on Town-owned land on Fishers Island.

Fort Wright Parade Ground and Airport Property on Fishers Island encompasses 65 acres and contains a rare habitat, the largest assemblage of warm season grasslands within the Town. It is recommended that the Town work with the Fishers Island Conservancy, Habitat Committee, and Fishers Island Ferry District, to incorporate the latest science in further stewardship of the area.

The Ferry District adopted a grasslands management plan with the following objectives: (i) restoring a grassland habitat that can be managed in a cost-effective way; (ii) increasing the safety of the Airport and Parade Ground by improving aircraft visibility and controlling access to airport runways and Fort Wright concrete structures; and (iii) increasing public access to the improved habitat by enlarging the walking path system throughout the Parade Ground and creating direct access to Race Point.

- G | Develop Stewardship Management Plans for Town Open Space properties that incorporate these objectives (see Chapter 10, "Land Preservation," for related information).

### **Objective 2.3**

**Preserve and manage trees by adopting a Tree Preservation Local Law for the purposes of protecting woodlands and individual historic, significant, and scenic trees important to the community.**

The woodlands and trees of the Town have important values that include protection against climate change through carbon sequestration. Wildlife habitat and

individual trees that are significant in size and/or have historic or scenic value are important to preserve. Street trees serve multiple purposes, including encouraging pedestrian and bicycle use by providing shade that reduces the heat generated by pavement. Around the turn of the century, clearing of woodland areas to allow for farming resulted in the loss of many trees. Additional loss occurs from storms, development, and disease. The preservation of existing trees occurs through the purchase of open space, and new street trees are planted through the work of the Southold Town Tree Committee and Planning Board.

The woodlands and trees of the Town are managed by numerous boards, departments, and committees. The Town Code currently contains regulations to prevent the clearing of woodlands and individual trees in numerous sections. The Town of Southold Tree Committee (est. 1987) manages trees on streets and on public grounds and administers the Commemorative Tree Program. The Committee also works to increase awareness of the importance of trees and proper tree care.



In response to residents' complaints regarding the trimming and removal of trees by the electrical utility company, in 2006, the Town worked with the utility to develop and adopted a tree-trimming notification protocol to prevent the clearing of significant street trees. The Town of Southold Tree Committee is actively involved in the management of Long Island Power Authority's efforts to keep electrical wires free from tree limbs.

- A |** Continue to incorporate existing woodlands and/or individual trees as natural/non-disturbance buffers adjacent to wetlands and water bodies.

Chapters 240 *Subdivision of Land* and 280 *Zoning* establish processes to protect woodlands and tree species during the design of subdivisions and site plans. During the subdivision application process, an Existing Resources Site Analysis Plan (ERSAP) is required. The purpose of the ERSAP is to map existing land features including vegetative types, general cover type, isolated significant trees with a diameter breast height (DBH) in excess of 18 inches, and the canopy line of existing trees and woodlands. Site plans are required to show large, significant trees. The features are then managed and or preserved through avoidance and/or mitigation in design.

- B |** Continue the tree mitigation bank managed by the Southold Town Tree Committee to allow for donations of trees and/or money for trees to be planted.

Town Code currently requires trees to be planted along streets in new subdivisions and around new parking lots. In numerous cases, the Planning Board will accept existing trees on site in lieu of requiring the planting of new trees. Correspondingly, in areas where trees might be counter-productive, e.g., in agricultural areas, street tree requirements are often waived. The primary purpose of the bank is to replace street trees in hamlet areas and along public roads.

- C |** Strengthen the tree-trimming coordination process between the Southold Tree Committee and NYSDOT, SCDPW, and the Long Island Power Authority to better manage tree-trimming projects and/or the replacement of trees removed along public roadways.
- D |** Implement a native oak and American Beech tree re-planting program.

These tree species are critical for wildlife use and improved biodiversity.

## 🎯 Objective 2.4

### Update the tree list in the Town Code to include native, drought-tolerant species.

The planting of street trees is required for every new road created. The Town Code's highway specifications section lists the 10 species of trees that are acceptable. This list must be updated to eliminate non-native species, notably the Norway maple. The New York State of Environmental Protection Interim List of Invasive Plant Species in New York State identifies the Norway maple as an Invasive Species requiring management

(control and eradication). This list should also be reviewed to add more native, drought-tolerant species.

- **Responsible Parties:** Town of Southold Planning Department
- **Possible Partnerships:** Town of Southold Agricultural Advisory Committee, Fishers Island Conservancy, Town of Southold Tree Committee, Long Island Power Authority/PSEG, New York State Department of Environmental Conservation, U.S. Environmental Protection Agency, other non-governmental agencies

### 🎯 **Goal 3: Protect Fish and Wildlife Resources**

Southold contains a variety of fish and wildlife resources and the habitats they need to survive, including species that are important to the economy, e.g., shellfish. The U.S. Fish and Wildlife Service (USFWS) and NYSDEC are the two primary wildlife management entities that manage wildlife in the Town. USFWS establishes and maintains the protected species lists and provides many strategies and programs to manage wildlife. NYSDEC manages wildlife under the New York State Fish and Wildlife Management Act that was passed by the Legislature in 1957 for two major purposes:

- To encourage the preservation and development of fish and wildlife resources on privately owned lands and waters.
- To improve public recreational access to these resources.

Both organizations strive to protect the biodiversity of the region, which includes all of the different species of animals, plants, fungi, and even microorganisms living in the state.

The most significant threats to New York's biodiversity include:

- Habitat destruction, alteration, and fragmentation
- The spread of invasive species
- Pollution
- Illegal collection of native species
- Climate change

Locally, the Town's biodiversity faces similar challenges. While pollution has been greatly reduced, pesticides and fertilizers still alter the chemical balance of our ground and surface waters to the detriment of fish and other aquatic life. On land, insect pollinators (many

species of bees and butterflies) critical to crop production have also suffered a decline in populations due to pesticides and loss of natural habitat (e.g., development and excessive deer herbivory).

In the marine environment, scientists have indicated that warming trends of surface waters have led to the decline of eelgrass beds that previously thrived in Peconic Bay and the Long Island Sound. Climate change is also expected to cause certain species to shift their ranges, with species that cannot move or adapt becoming extinct.

The spread of invasive non-native species has dramatically changed the composition of habitats and wildlife, often reducing or replacing native species populations and decreasing wildlife that relied on the habitats for food and shelter.

One of the most aggressive invasive species in Town is the common reed (*Phragmites spp.*), which often encircles freshwater and brackish systems. The plant is capable of growing into dense monocultures shading out native vegetation.



As the Town's human population increases and wildlife habitat decreases, the need to manage fish and wildlife will become increasingly important. Wildlife management in the Town is accomplished by several departments and individuals involved in different management approaches. The most successful approach is the acquisition of open space lands to protect quality habitat from destruction. Preventing the development of habitat and the protection of vulnerable species will continue to be a priority of the Town.

On certain Town- and State-owned lands and waters, the Town is active in habitat and species restoration efforts, including funding shellfish restoration efforts, supporting eelgrass protection and restoration efforts, and developing Natural Resource Stewardship Management Plans.

Correspondingly, the Town is focusing on managing user groups on Town-owned lands and controlling nuisance species and invasive species to protect remaining habitats.



Aquaculture Cornell Cooperative at Cedar Beach in Southold

### 🎯 Objective 3.1

#### Protect and manage sustainable fisheries habitats.

Maintaining a sustainable fishing industry within Town waters has become more difficult due to pollution, theft, and inequitable catch limits that vary from state to state.

- A |** Develop a Regional Habitat and Fisheries Management Plan to ensure that commercial and recreational uses of living marine resources in Southold are managed in a manner that accomplishes the following:
- Places primary importance on maintaining the long-term health and abundance of marine fisheries.
  - Results in sustained useable abundance and diversity of the marine resource.
  - Does not interfere with population and habitat maintenance and restoration efforts.
  - Uses best available scientific information in managing the resource.
  - Minimizes waste and reduces discard mortality of marine fishery resources.
  - Restricts commercial and recreational activities, including the use of certain gear types, gear sizes, and practices that have negative impacts on marine habitats.
  - Encourages water-enhanced and water-dependent economic and recreational activities without destroying or degrading the natural coastal environment.

- B |** Identify areas to establish shellfish spawner sanctuaries in Town water bodies to increase bay scallop (*Argopecten irradian*) and American oyster (*Crassostrea virginica*) densities.

A pilot program is recommended in the form of a Town of Southold Spawner Sanctuary Management Plan for the Peconic Bay scallop or American oyster and located in Hallocks Bay, Orient Harbor, Goose Creek, Corey Creek, and Richmond Creek. This program will also further the goals of the Town's LWRP and PEP.

Enhancement of shellfish stocks through a strategic network of "no-take" spawner sanctuaries is essential for effectively restoring Peconic Bay scallops and American oysters, keystone species of the bay. The sanctuaries will increase the spawning stock biomass and should increase the fertilization success of the species. In addition, stocking shellfish is an immediate step toward restoring the planktonic food web and ecosystem function by increasing the benthic filtering capacity in the bay and creeks.

The results of successful implementation will be long-term habitat improvement, improved water quality, restoration of ecosystem function, and enhanced commercial and recreational opportunities.

- C |** Continue to fund and support Hard Clam (*Mercenaria mercenaria*) Seeding Programs.
- These programs provide similar benefits to the spawner sanctuaries described above.
- D |** Encourage and continue to support existing and future industries related to fishing and aquaculture, including marine trades, marinas, and marine research, as important business sectors within the Town's economy.
- E |** Work with NYSDEC to explore the installation of an artificial reef to increase commercial fishing productivity.
- F |** Work with NYSDEC to develop alternative shoreline hardening systems to achieve less failure and wood debris in marine environments following hurricane/storm events.
- G |** Work with NYSDEC and develop partnerships to establish Seagrass Management Areas and Management Plans that sustain remaining eelgrass (*Zostera marina*) meadows and support successful seagrass restoration.

### 🎯 Objective 3.2

#### Protect vulnerable fish, wildlife, and plant species, and rare ecological communities.

Vulnerable fish, wildlife, and plant species are those species listed by the State as Endangered, Threatened, Special Concern, Exploitably Vulnerable, or Rare. These species are protected by law, and the lists can be found online at the NYSDEC website. The presence of vulnerable species in Southold is assessed during various surveys, including the Audubon Christmas Bird Count and numerous surveys by the Suffolk County Cornell Cooperative Extension and others. The Town's current development review process analyzes individual parcels for the occurrence of protected species by coordinating with the New York State Natural Heritage Program. Often, development areas are designed to avoid potential habitats of vulnerable species.

**A |** Work with federal, state, and county agencies to designate portions of Plum Island, Little Gull Island, and Great Gull Island as a wildlife protection/conservation area for their potential to contain vulnerable fish, wildlife, and plant species and rare ecological communities.

**B |** Protect vulnerable wildlife species using existing species records and field surveys of proposed development sites, at the appropriate times, for the presence of listed species or conditions that meet their habitat requirements:

**1 |** Continue to support and broaden the Sea/Shore Bird Monitoring Program using qualified organizations.

Currently, the Town subcontracts with a local qualified organization to monitor and protect vulnerable sea/shore bird species such as the piping plover (*Charadrius melodus*) and tern species.

**2 |** Ensure large-scale fence installations (e.g., deer fencing) allow for the movement of vulnerable species including the box turtle and spotted turtle.

The life cycle of many species requires seasonal migration to habitats. For example, the recent large extent of deer fencing installed in many places in Southold is a cause for concern over potential blockage of turtle migration routes. Deer fencing should be installed with small openings that would allow certain vulnerable species through (turtles or others), but still accomplish the goal of excluding deer.

**C |** Protect vulnerable plant species through the review of existing species records and field surveys of proposed development sites, in the appropriate season, for the presence of listed species or conditions that meet their habitat requirements.

**D |** Restore habitat of critical pollinator species (e.g., bees and butterflies) on Town-owned properties.



**E |** Continue to identify, map, and protect rare ecological communities as critical lands.

The New York Natural Heritage Program ranks each community with a global and state rank based on rarity. The global rank reflects the rarity of the community throughout the world and the state rank reflects the rarity within New York State. These ranks are used by the Town to identify and protect biodiversity during the design phase of development projects, as well as to help target candidate properties for preservation.

Southold Town has begun to identify and map ecological communities to protect the biodiversity of the Town. A comprehensive mapping project will need to be conducted to minimize the loss of these communities. The mapping project will include identified rare ecological communities described in the 2002 draft version of "Ecological Communities of New York State." This mapping effort will result in better land use decision making.

**F |** Identify, map, and protect additional significant underwater ecological communities as critical waters.

Similar to our landmass, our waters contain areas of high ecological significance. Federal, state, and local governments and agencies have placed numerous

legal designations on our lands and waters to provide land use managers with data that enables better decision-making. In 1992, USEPA designated the Peconic Estuary as a National Estuary, recognizing its important ecological significance. Other designations of Town waters include the following:

- USFWS Northeast Coastal Areas Study Ecological Complexes
- New York State Department of State (NYSDOS) Significant Coastal Fish and Wildlife Habitat
- NYSDEC Critical Environmental Areas
- Shellfish Harvest and Seeding Areas
- Peconic Estuary Program Critical Natural Resource Areas
- Estuary of National Significance (Long Island Sound)

A complete discussion on the meaning of each designation is included in **Appendix 4**.

### 🎯 Objective 3.3

#### Protect and restore Significant Coastal Fish and Wildlife Habitats.

Southold Town contains 21 Significant Coastal Fish and Wildlife Habitats (SCFWH). These habitats are indicative of high ecological value. To designate a SCFWH, NYSDEC evaluates the significance of coastal fish and wildlife habitat areas; then NYSDOS, following a recommendation from NYSDEC, designates and maps the specific areas. Recent additions to the program include Pipes Cove (2005) and the Goldsmith Inlet and Beach (2005). Southold Town recognizes the importance of protecting and enhancing these valuable habitats. A map showing the areas is included as **Figure 6.5**. A list of the SCFWHs and their narratives can be found at the NYSDOS website at the following address: <http://www.dos.ny.gov/communitieswaterfronts/consistency/scfwhhabitats.html>.

### 🎯 Objective 3.4

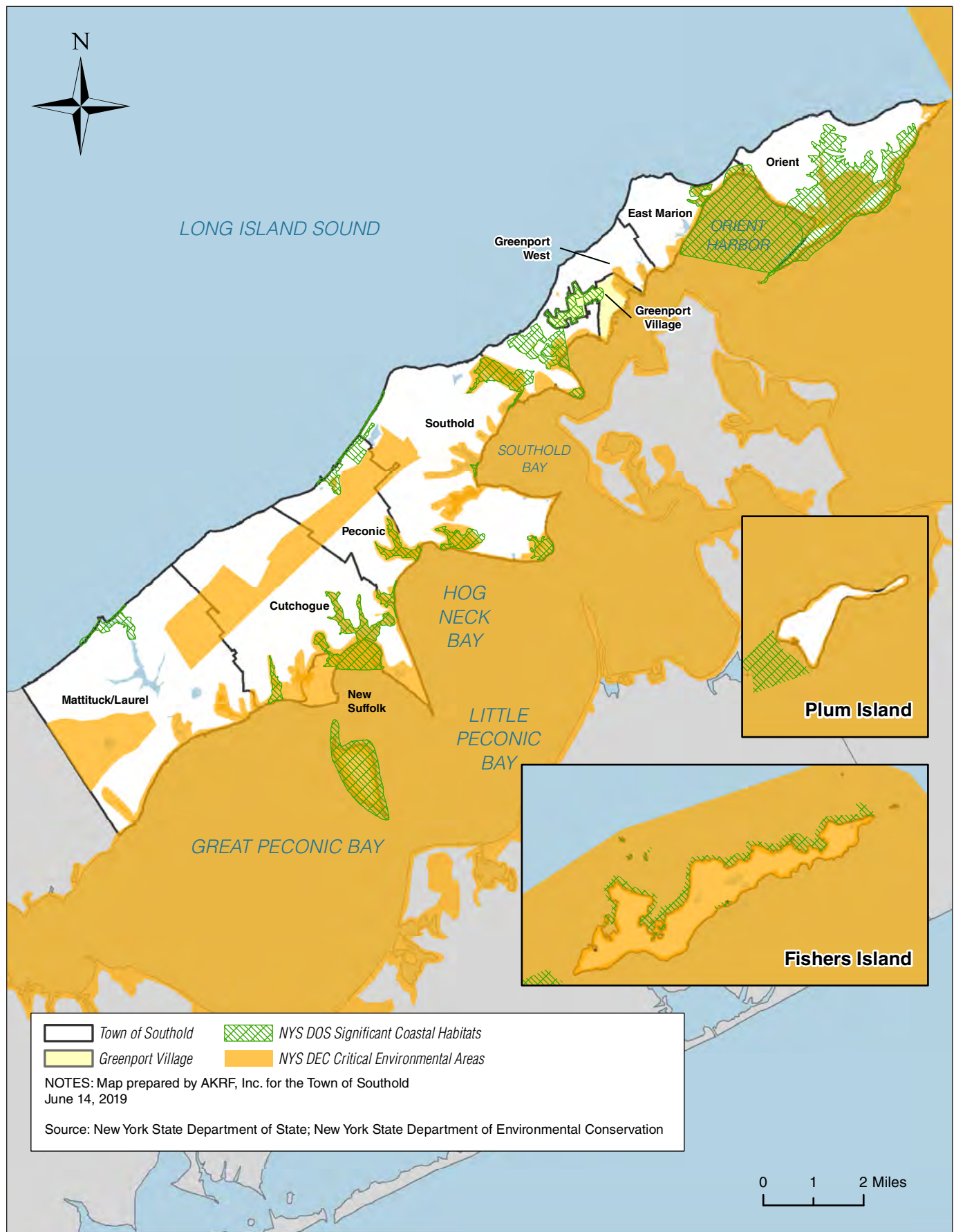
#### Protect and restore NYSDEC Critical Environmental Areas.

Southold Town contains 23 NYSDEC Critical Environmental Areas (CEA). To be designated as a CEA, an area must have an exceptional or unique character with respect to one or more of the following:

- A benefit or threat to human health
- A natural setting (e.g., fish and wildlife habitat, forest and vegetation, and/or open space and areas of important aesthetic or scenic quality)
- Agricultural, social, cultural, historic, archaeological, recreational, or educational values
- An inherent ecological, geological, or hydrological sensitivity that may be adversely affected by any change

The designations are important in review of development actions because the State Environmental Quality Review Act requires that a potential impact on the environmental characteristics of a CEA must be evaluated. A map showing the locations of CEA and SCFWH in Southold is included as **Figure 6.5**. Detailed maps of each CEA and narratives for them can be accessed at the NYSDEC website at the following address: <http://www.dec.ny.gov/permits/25153.html>.

- **Responsible Parties:** Town Planning Department
- **Possible Partnerships:** New York State Department of Environmental Conservation, U.S. Fish and Wildlife Service, Land Preservation Department, Agricultural Advisory Committee, Stewardship Committee, other non-governmental agencies

**Figure 6.5** NYSDOS Significant Coastal Habitats and NYSDEC Critical Environmental Areas

## **Goal 4: Monitor and Control Nuisance Species**

NYSDEC classifies a Nuisance Animal as “a wild animal that is likely to cause property damage or is persistent and perceived as an annoyance. If an animal is not causing any concern, for example, it is simply passing by, is observed only once or twice and does not cause any harm, then it should not be considered a nuisance”. The department defines a Damaging Animal as “a wild animal that damages property, for example, digs up your yard, eats your landscape plants or vegetable garden, kills or threatens your livestock or pets, fouls your lawn, eats the fish in your pond, damages your home, etc.”

The Town does not regulate the taking of nuisance or damaging animals; however, in 2009, the Town formed a Deer Management Task Force to address the serious health and economic consequences of deer populations.

### **Deer**



#### **Objective 4.1**

**Manage Whitetail Deer (*Odocoileus virginianus*) populations and work with wildlife management agencies to educate the public on the advantages and disadvantages of deer populations.**

Deer overpopulation is a serious problem in Southold, affecting quality of life, the economy, and public health. Concerns include loss of crops, landscaping and gardens, collisions with vehicles, loss of understory in woodlands, and the spread of tick-borne diseases.

In response to these concerns, the Town formed a Deer Management Task Force in 2009 to develop management practices to address deer overpopulation.

The Task Force implements programs and services and educates the community on deer-related issues through workshops, forums, and written publications. The Task Force also works in conjunction with county and state agencies to develop and co-sponsor programs. The objectives of deer management have evolved into not only managing the species as a nuisance, but also as a vector for tick-borne diseases. One published study has estimated that Lyme Disease alone may cost society over two billion dollars a year. The Whitetail Deer is the keystone host for the tick that transmits Lyme Disease.

- Provide education to the public on the laws regulating the feeding of deer.

#### **Objective 4.2**

**Work with organizations and property owners to help assess and control ticks and prevent tick-borne diseases.**

The populations of Lone Star Ticks (*Amblyomma americanum*) and Deer Ticks (*Ixodes scapularis*), continue to spread. As tick populations increase, so does disease risk. There are currently 10 known major tick-borne infections in the U.S. that affect humans, most of which are carried by species of ticks that feed on deer.

### **Geese**



#### **Objective 4.3**

**Manage public properties to achieve a reduction in resident Canada Goose populations.**

Canada Geese are a valuable resource that provides recreation to bird watchers and hunters. But in recent years, gaggles of local-nesting or “resident” geese have

become year-round inhabitants. They cause significant problems to recreation areas, athletic fields, and agriculture fields, including crop loss to local farmers (the geese feed on seedlings and cover crops used to preserve soils outside of the growing season). In addition, large numbers of geese contribute to water pollution by elevating fecal coliform bacteria in the water body.

The Town's current policy toward geese on Town land is to integrate into Land Management Plans passive management strategies such as the re-vegetation of areas, which is designed to deter geese from using the space. Future strategies will likely include additional methods as research reveals which are most effective.

#### 🎯 Objective 4.4

**Continue to provide education to the public on the advantages and disadvantages of high-density goose populations.**

In 2012, the Town Board passed local legislation prohibiting the feeding of waterfowl on Town-owned properties. The law will assist the Town in controlling resident populations and assist with the improvement of water quality efforts. A public education notice should be added to the Town's website and media channel to disseminate the information contained in the local law.

#### 🎯 Objective 4.5

**Work with NYSDEC and USFWS to develop a general permit to allow farmers to conduct controlled year-round hunts on multiple agricultural parcels to prevent crop and cover crop loss.**

Canada Geese, including resident gaggles, are protected by federal and state laws and regulations. In New York, management responsibility for Canada Geese is shared by USFWS, the U.S. Department of Agriculture (USDA), and NYSDEC. It is illegal to hunt, kill, sell, purchase, or possess migratory birds or their parts (feathers, nests, eggs, etc.) except as permitted by regulations adopted by USFWS and NYSDEC.

The circumstances when federal or state permits are needed to address a problem with Canada Geese can be complex; however, NYSDEC provides guidelines for allowing the control of geese by farmers.

### Coyote (Fishers Island)



#### 🎯 Objective 4.6

**Work with NYSDEC and USFWS to monitor the Eastern Coyote (*Canis latrans*) on Fishers Island**

The eastern coyote (*Canis latrans*) is a medium-sized dog-like animal with long, thick fur, usually weighing between 35 and 45 pounds. Their diet consists of berries, insects, and small mammals, including domestic pets. Recently, the animal has been sighted on Fishers Island and the residents are concerned about their pets and the long-term impacts. It is recommended that the Town support a monitoring program of the species on Fishers Island.

- **Responsible Parties:** Town of Southold Department of Public Works, Town of Southold Deer Management Task Force, Agricultural Advisory Committee, Island Community Board (Fishers Island)
- **Possible Partnerships:** Fishers Island Conservancy, New York State Department of Environmental Conservation, U.S. Fish and Wildlife Service, Land Preservation Department

### 🎯 Goal 5: Monitor and Control Invasive Species

NYSDEC defines an invasive species as "non-native species that can cause harm to the environment, the economy or to human health." Invasive wildlife, insect, and plant species occur throughout the Town

### 🎯 Objective 5.1

#### **Recognize the NYSDEC Mute Swan (*Cygnus olor*) Research Program.**

Mute swans are a non-native, invasive species first brought to this country for their aesthetic value from Europe in the late 1800s (NYSDEC). They are a protected species under the New York State Conservation Law. NYSDEC is currently conducting research to assess the impacts of the species on habitats and wildlife to control populations.

### 🎯 Objective 5.2

#### **Develop an education program prohibiting the introduction, throwing, dumping, depositing, or placing invasive species on/in Town land and waters.**

Invasive species are species that have been introduced into the Town's habitats (both terrestrial and aquatic). They are adaptable to ecosystems, and in high densities can cause harm to the existing environment and native animal and plant populations. NYSDEC identifies invasive species as the second leading threat to New York State biodiversity.

The Town contains many species of invasive plant species; however, the most problematic are species with aggressive growth habits that displace native habitats or protected species. Landowners frequently seek permits to remove the common reed from their properties. On Fishers Island, residents have become increasingly concerned about the establishment of the common reed, kudzu (*Pueraria lobata*) and Japanese knotweed (*Polygonum cuspidatum*) (Personal Communication). Mile-a-minute weed (*Persicaria perfoliata*) is also becoming more prevalent in Southold.

In addition to terrestrial species, aquatic species have also become problematic, prompting Suffolk County to pass legislation to prevent the spread of invasive, non-native aquatic plants and animals. The law prohibits the introduction, throwing, dumping, depositing, and placing of invasive species in any river, stream, lake, pond, wetland, or stormwater drain, in whatever capacity and for whatever purpose.

In addition, Suffolk County became the first county in New York State to pass a "Do-Not-Sell List" in 2007, stopping the sale of invasive plant species. The law is a major move in the fight against the spread of these species into our lands and waters. The ban on these species became effective January 1, 2009. More information on the law, along with the list of banned species, can be found on Suffolk County's website.

The Long Island Invasive Species Management Area (LIISMA) website also has more information on local invasive legislation and the scientific ranking system developed to determine analytically whether a species is highly invasive (see [http://www.nyis.info/?action=liisma\\_pages](http://www.nyis.info/?action=liisma_pages)).

### 🎯 Objective 5.3

#### **Target the removal of invasive species from Town-owned lands to facilitate the re-establishment of indigenous community types when a known population of endangered, threatened, species of special concern, locally rare or unique native species, or ecological community is directly jeopardized.**

On Town-owned properties, the introduction of exotic and invasive plants and animals poses a clear threat to native species, integrity of the natural communities and biodiversity.

### 🎯 Objective 5.4

#### **Encourage Landscaping Best Management Practices to eliminate the use of invasive species.**

### 🎯 Objective 5.5

#### **Continue to educate the public about the benefits of using native species in landscaping.**

Include a web page on the Town's website that provides plant species recommended to replace non-native plant species and support native plant use in landscaping through the development of a handout of nurseries that sell native plants as a supplement to Town applications.

In addition, as mentioned above in Water Resources, include schematics on the benefits of varying widths and vegetative compositions of vegetated buffers adjacent to water bodies.

### 🎯 Objective 5.6

**Work with Cornell Cooperative Extension of Suffolk County and NYSDEC to provide information on how to control invasive species including Integrated Pest Management (IPM).**

- A |** Provide education on the potential impact of the emerald ash borer (*Agrilus planipennis*) and Asian longhorned beetle (*Anoplophora glabripennis*) on trees located within the Town.



*The emerald ash borer (Agrilus planipennis)*

One of the most problematic invasive species threatening ash trees in the Town is the emerald ash borer (EAB), an invasive wood-boring beetle that is native to Asia. The EAB infests and kills North American ash trees, including green ash (*Fraxinus spp*). The EAB's presence has now been confirmed in seven counties across the state and rapidly spreading. More information is available at <http://www.nyis.info/?action=management>.

Similarly, the Asian longhorned beetle is also a threat to trees in the Town. The species has been found to infest and kill trees such as maples (*Acer spp*) and elms (*Ulmus spp*).

Other species that warrant control are the gypsy moth (*Lymantria dispar*) and the hemlock woolly adelgid (*Adelges tsugae*).

### 🎯 Objective 5.7

**Support the Cleaner Greener New York Fighting Invasive Species initiative.**

### 🎯 Objective 5.8

**Educate the public and tree service companies about preventing the spread of diseases that affect native trees.**

Diseases such as Oak Wilt have the potential to destroy large areas of woodland. Education is key to preventing the spread of tree diseases.

- **Responsible Parties:** Southold Town Planning Board, Southold Land Preservation Department and Committee, Southold Town Department of Public Works
- **Possible Partnerships:** Southold Town Tree Committee, New York State Department of Environmental Conservation, U.S. Fish and Wildlife Service, Suffolk County Department of Public Works, other non-governmental agencies

## 🎯 Goal 6: Take Action Against Climate Change by Reducing Energy Consumption

For each region, the report includes observed climate trends and future climate projections. Within each of the eight sectors, climate risks, vulnerabilities, and adaptation strategies are identified with integrated themes of equity, environmental justice, and economics. The findings indicate that climate change will pose significant challenges to land use and natural resources management in the future. Increases in temperature and extreme heat events (heat waves) are expected to occur and will affect the drinking water supply, crop ranges, pest populations, and habits of wildlife as well as prompting a large increase in energy demand. Small changes in precipitation rates, extreme precipitation events, and increased frequency of warm season droughts are also expected to occur. The report indicates that heavy downpours have increased over the past 50 years, and the trend is expected to continue. These downpours cause localized flooding and stormwater runoff, which increases pollutants in surface waters.

Southold has been on the forefront of the alternative energy movement and has made significant changes to application processes and legislation to integrate renewable energy and energy conservation measures in the Town.

In 2006, the Town Board created the Southold Renewable and Alternative Energy Committee to make recommendations regarding renewable and alternative energy policies and investigate federal, state, and local utility legislation initiatives, incentive programs and grant/loan funding opportunities. The committee also worked with local businesses and landowners, utility companies, and governmental entities to establish a

proactive approach to integrate renewable and alternative energy into land use and building design while educating the public about opportunities. In 2007, the Committee drafted the Small Wind Energy Code permitting wind turbines on agricultural properties greater than seven acres. In 2010, the Town Board adopted dark skies legislation reducing energy consumption Town-wide. In 2012, the Committee spearheaded a streetlight retrofit/replacement project.



In addition to legislative efforts, the Town has capitalized on numerous funding programs to purchase alternative fuel vehicles upgrade facilities and equipment, and implement energy conservation measures. Application processes were also changed; at the direction of the Town Board, the Building Department developed a fast track permit process for residential and commercial solar installations.

Currently, due to incentive programs and government support, alternative energy has become available with competitive pricing. The integration of alternative energy uses and cost-saving measures are progressing within the Town. Correspondingly, the Town continues to position itself to capitalize on incentive programs and funding to install renewable energy systems on Town property.

### **Objective 6.1**

#### **Continue to improve the energy efficiency of Town facilities and fleets.**

Several energy upgrades have been made to Town buildings in the past. Recently, numerous energy audits have been completed.

Similarly, significant progress in fleet management has occurred with implementation of the Fuelmaster Fleet Management System. The system monitors fuel efficiency in vehicles and identifies which vehicles are inefficient. All of the Town vehicles are monitored by the program (except those located on Fishers Island).

- A** | Continue to reduce energy consumption at Town facilities.
- B** | Continue to improve efficiency of the Town's vehicle fleet.
  - 1** | Continue to replace the Town's current vehicle fleet with alternative fuel vehicles and site alternative fueling stations at Town facilities.
  - 2** | Find funding to hire a consultant firm to conduct a feasibility study and cost benefit analysis for the Town to transition to alternative vehicle fleet and siting of shared alternative fueling stations at Town facilities.
  - 3** | Purchase multiple vehicles of the same type for Town fleets to improve maintenance and repair costs and efficiency.
  - 4** | Consider appointing a part-time fleet manager for all Town vehicles.

### **Objective 6.2**

#### **Continue to improve the energy efficiency of new construction and remodeling projects.**

- A** | Improve the energy efficiency of new construction and existing building stock through building codes, NYSEERDA, and utility company energy-efficiency programs, including the New York Energy Star Program and Long Island Green Homes.
- B** | Evaluate the Long Island Green Homes Program for Consortium participation.

The Long Island Green Homes Consortium is a cooperative effort of seven Long Island municipalities. The goal of the Consortium is to reduce energy costs and usage for Long Island homeowners by helping them get comprehensive home energy audits and make cost effective energy upgrades to their home. Currently, Southold Town is not a member of the Consortium.

- C** | Maintain the most up to date International Building Codes (IBC) and International Energy Conservation Code (IECC) and provide training for Town staff to implement.

### **Objective 6.3**

#### **Minimize reliance upon energy through design and new technologies.**

- A** | Design subdivisions and site plans for optimum solar orientation and access.

- B** | Encourage developers and residents to orient and design structures to achieve optimum passive solar exposure.
- C** | Protect solar access of all property owners through the establishment of adequate setbacks.
- D** | Encourage the use of geothermal heating and cooling in structure design.

#### 🎯 Objective 6.4

**Reduce energy consumption through improved communication and collaboration regarding energy issues.**

- A** | Provide energy conservation education and awareness in Town communications.

Provide energy conservation information on the Town website with links to Renewable Energy Long Island, electric company rebates, Energy Efficiency Programs, Economic Development Programs (commercial), NYSEDA, and other energy conservation groups and programs.

- B** | Work with utility companies to provide energy conservation promotional materials to residential and commercial building owners through the Renewable and Alternative Energy Committee.
- C** | Hold periodic public coordination meetings through the Renewable and Alternative Energy Committee to keep people informed of the latest programs offered by the utility companies.

#### 🎯 Objective 6.5

**Expand renewable energy opportunities that provide direct benefit to citizens, while ensuring quality of life.**

- A** | Update Chapter 277 *Wind Energy Code* to address health, safety, and welfare concerns of citizens.
- B** | Amend the Town Code to allow commercial renewable solar energy power generation projects.
- C** | Identify potential parcels for commercial small wind energy systems including parcels on Fishers Island.
- D** | Consider amending the Town Code to expand renewable energy projects for residential use on parcels greater than seven acres in size.
- E** | Encourage and support renewable energy uses on Plum Island that take into account the environmental sensitivity and Atlantic Flyway.

- F** | Work with the Long Island Solar Energy Industries Association (LISEIA) in the development of projects.
- G** | Capitalize on incentive programs for the development of commercial renewable energy infrastructure.



#### 🎯 Objective 6.6

**Protect scenic, natural, and cultural resources while planning for the provision of adequate energy for the future.**

- A** | Protect scenic qualities important to the community from public vantage points including New York State Route 25 and Suffolk County Route 48 when locating energy generating or transmission facilities.

Mitigate adverse impacts through:

- Burying transmission lines
- Supporting innovative designs
- Requiring significant vegetative buffering
- Requiring large setbacks
- Requiring relocation
- Denial

- B** | Protect natural resources and environmental qualities when locating energy generating or transmission facilities.

Mitigate adverse impacts through:

- Supporting innovative designs
- Requiring significant vegetative buffering
- Requiring large setbacks
- Requiring relocation
- Denial

- 1** | Discourage facilities from locating in designated environmentally sensitive areas.

- 2 |** Preclude the potential degradation of coastal resources by locating and constructing new electric energy generating/equipment/transmission facilities so that they would not adversely affect:

- Commercial navigation
- Commercial and recreational fishing
- Agricultural lands
- Designated SCFWHs
- Habitats critical to vulnerable fish and wildlife species, vulnerable plant species, and rare ecological communities
- Important Bird Areas
- The Atlantic Flyway
- Wetlands and protected natural features

- C |** Scenic resources (scenic views from State Route 25 and County Route 48)

- D |** Protect historic and cultural resources when locating energy generating or transmission facilities.

Mitigate adverse impacts through:

- Supporting innovative designs
- Requiring significant vegetative buffering
- Requiring large setbacks
- Requiring relocation
- Denial

- E |** Work with energy providers through the specific area planning process to identify appropriate coastal locations for major energy generating or transmission facilities.

Consider coastal locations where a clear public benefit is established using the following factors.

- There is a demonstrated need for the facility.
- The facility will satisfy additional electric capacity needs or electric system needs.
- Alternative available methods of power generation and alternative sources of energy cannot reasonably meet the public need.
- Upgrades of existing facilities cannot reasonably meet the public need.
- The facility incorporates feasible public recreational uses

### **Objective 6.7**

**Ensure maximum efficiency when siting major energy generating facilities.**

- A |** Achieve maximum transmission efficiency by siting major energy generating facilities close to load centers.
- B |** Work with energy providers to co-locate, where possible, facilities such as transmission lines, pipelines, substations, and terminals.
- C |** Encourage the adoption of designated generation and transmission and facility sites and corridors to protect against incompatible development and to maximize increased capacity.

### **Objective 6.8**

**Work to foster collaborative relationships with energy providers.**

- A |** Work closely with energy providers during the evaluation of development plans to assess cumulative impacts on energy availability and reliability in the Town.
- B |** Coordinate with energy providers in siting discussions to ensure energy infrastructure is adequate to support growth and infrastructure development.
- C |** Encourage involvement of energy providers in area planning processes.

### **Objective 6.9**

**Provide information to the community regarding future energy facilities.**

- A |** Keep up-to-date information about locations of existing and potential new generation and transmission facilities on the Town website.
- B |** Review development proposals along with short- and long-range plans of energy providers to ensure an understanding of where facilities may be and to keep prospective residents and businesses informed.

### **Objective 6.10**

**Participate in regional energy planning initiatives and programs.**

- A |** Participate in the Cleaner Greener Communities regional planning efforts.
- B |** Consider participating in the Climate Smart Community Initiative and adopting the Climate Smart Communities Pledge.

### 🎯 Objective 6.11

**Improve the efficiency of natural gas in new construction and remodeling projects through education on National Grid programs and incentives.**

- Provide links on the Town's website for the incentives and rebate programs offered by National Grid on its Renewable and Alternative Energy Committee website.
- **Responsible Parties:** Southold Planning Board, Southold Energy Committee
- **Possible Partnerships:** The electrical utility company, National Grid, New York State Energy Research & Development, New York State Department of Environmental Conservation, other non-governmental agencies

### 🎯 Goal 7: Adapt to the Effects of Climate Change and Rising Sea Levels

Sea level rise, warming waters, and changes in storm patterns will affect our coastal dynamics. The Town has adapted to coastal hazards (storms, tidal surges, flooding, and erosion) throughout time; however, currently an unprecedented high density of residential structures and infrastructure is located in potential hazard areas. Recent storm events have damaged coastal residences, natural features, and public infrastructure in areas of the Town. In 2012, Hurricane Sandy flooded a large majority of the "A" mapped Federal Emergency Management Agency (FEMA) Flood Zones, including areas never flooded before in recorded history. The A Zone mapped areas are subject to inundation by the 1 percent-annual-chance flood event. This event has resulted in a shift in how the Town approaches the management of development in the coastal zones.

Correspondingly, the most significant challenge to the Town over the next 100 years will be the adaptation to climate change and sea level rise. In "Climate Adaptation Guidebook for New York State" (2011), the authors project that Long Island will experience between a 2 to 5 inch rise in sea level in the 2020s.<sup>6</sup> With rapid ice melts due to warming trends, the level

could rise to 5 to 10 inches. This poses a real risk to the low-lying areas and the natural resources within the Town. Home design and erosion control structures located within these areas will need to be reengineered to adapt to more frequent flooding events.

Southold Town has participated in some sea level rise planning during the 2014 update to the Suffolk County Multi-Jurisdictional Multi-Hazard Mitigation Plan, which contains goals for coastal resilience specific to Southold. See also Chapter 12, "Natural Hazards," which contains related goals and information about planning for sea level rise.

### 🎯 Objective 7.1

**Develop a Coastal Resilience Plan.**



*Building damaged by Hurricane Sandy*

- A | Continue to work with NOAA and The Nature Conservancy in the development and application of the Vulnerability Assessment for Coastal Hazards for the Town.

This includes prioritizing parcels for land protection to help achieve coastal resilience by avoiding development in high hazard areas including planning for expected impacts from sea level rise that include:

- Flooding and storm surge impacts. The Town experienced this impact with Hurricane Sandy (2012); as noted above; most of the A mapped FEMA Flood Zones flooded within the Town. Property loss occurred in numerous locations.
- Saltwater incursion into groundwater aquifers will impact ecological function and the ability to provide drinking water. As sea level rises and intrudes into groundwater, wells will fail.

<sup>6</sup> Rosenzweig, Cynthia, et al. "Climate Adaptation Guidebook for New York State," in Responding to Climate Change in New York State: The Climaid Integrated Assessment for Effective Climate Change Adaptation in New York State: Final Report. Annals of the New York Academy of Sciences, Vol. 1244. Blackwell Science Publishers, Osney Mead, Oxford, England: 2011.

- Groundwater tables will rise, impacting residences in lower elevations, and flooding basements and sanitary and drainage systems. This has serious implications for water quality for both groundwater and coastal bays and estuaries.
- Vegetation changes are also expected to occur with an increase in saturated soils from groundwater favoring wetland species over upland species that require drier conditions. Species composition is also expected to change in the upland habitats with more fast-growing, adaptable species becoming more dominant.
- Salt marshes will continue to disappear and/or migrate inland with sea level rise. Salt marshes provide crucial habitat for fish and wildlife, recreation, and act as a buffer to storm surges. The loss of salt marshes has been well documented by The Nature Conservancy.

The Town has adopted a proactive approach to prepare for hazards recognizing that adapting to these threats is unavoidable. Using tools such as the coastal resilience tool being developed by NOAA and The Nature Conservancy will help Town planners consider projections of where and how rising sea level might impact communities as they plan for future development.

- B |** Continue to implement the goals in the Suffolk County Multi-Jurisdictional Multi-Hazard Mitigation Plan, including goals related to coastal resilience and sea level rise specific to Southold.
- C |** Identify critical natural defenses to address sea level rise using cost-effective natural solutions.
  - 1 |** Re-assess taking into account how sea level rise impacts the purpose and width of buffers in Town Code Chapters 275 and Chapter 111.
  - 2 |** Re-assess the use of traditional, hardscape shoreline structures versus the benefits of natural, softscape solutions.

Adaptation to coastal hazards has traditionally been undertaken, often unsuccessfully, using shoreline hardening and engineered defenses. The engineered approach must adapt to more long-term and natural solutions. The Nature Conservancy and partners are identifying natural solutions (e.g., green, grey-green) and improving the science of ecosystem-based adaptation from the latest research. Natural solutions may help to counter hazard impacts: binding sediments,

attenuating waves, and growing upwards as sea levels rise.

Further discussions on sea level rise and coastal flooding as they relate to public safety and future land use are included in Chapter 3, "Land Use & Zoning," and Chapter 12, "Natural Hazards."

- **Responsible Parties:** Southold Planning Board
- **Possible Partnerships:** Southold Land Preservation Department and Committee, Southold Town MS4 Committee, New York State Department of Environmental Conservation, Federal Emergency Management Agency, U.S. Fish and Wildlife Service, Suffolk County Department of Public Works, other non-governmental agencies

## **Goal 8: Protect and Improve Air Quality**



Air pollutants originate from industries that manufacture chemicals and other goods, vehicles, and power equipment, and from energy facilities that burn oil, gas, or coal. Hot summer weather sets the stage for the formation of ozone (O<sub>3</sub>) and fine particulate matter (PM<sub>2.5</sub>), two pollutants of concern for human health. Fish and wildlife show harmful effects from acid rain and mercury in the air. Greenhouse gases (chiefly carbon dioxide) in the air are attributed to changing the world's climate (NYSDEC Website).

Currently, the air quality within Southold Town is considered to be within federal regulatory standards. The Town does not contain large industrial uses that are capable of producing localized threats to air quality. However, regional sources could affect the Town's populations and/or environments with the right weather conditions.

There are ways that the Town can help to reduce regional air pollution; these include continuing to develop sustainable, energy efficient buildings and grounds, planning for safer pedestrian movement in and around the hamlet centers to reduce vehicle dependency, and improving mass transportation and vehicle efficiency of the Town's fleet.

### **Objective 8.1**

#### **Reduce the production of greenhouse gases.**

- A** | Participate in the Cleaner Greener Communities regional planning efforts.
- B** | Support the Complete Streets concept.  
Complete Streets are designed and operated to enable safe access for pedestrians, bicyclists, motorists, and public transportation riders of all ages and abilities.
- C** | Reduce reliance on vehicles through the improvement of mass transportation and safe pedestrian traffic controls and sidewalks in hamlet centers.
- D** | Continue to replace Town fleet vehicles with alternative fuel, low emission vehicles.
- E** | Continue to replace aging equipment with more energy efficient equipment.

### **Objective 8.2**

#### **Control or abate existing air pollution and prevent new air pollution.**

- A** | Restrict emissions or air contaminants to the outdoor atmosphere that are potentially injurious or which unreasonably interfere with enjoyment of life or property.
  - 1** | Continue to promote the no idling policy for Town vehicles.
- B** | Recycle or salvage air contaminants using best available air cleaning technologies.  
A strategy to recycle certain types of these contaminants has already been implemented at the Town Landfill in Cutchogue where all appliances containing refrigerants are properly emptied and recycled by a trained, licensed technician (LWRP). Propane tanks and fire extinguishers are also recycled.
- C** | Limit greenhouse gas emissions and other pollution resulting from vehicle or vessel movement or operation, including actions which directly or indirectly change transportation uses or operation, resulting in increased pollution.

- D** | Limit discharges of atmospheric radioactive material to a level that is as low as practicable.

➤ **Responsible Parties:** Southold Planning Board, Southold Energy Committee

➤ **Possible Partnerships:** The electrical utility company, National Grid, New York State Energy Research & Development, New York State Department of Environmental Conservation, other non-governmental agencies

## **Goal 9: Continue to Manage Solid Waste and Hazardous Waste**

### **Solid Waste**

The Town's solid waste activities on the mainland are managed by three facilities operated by the Town and permitted under NYSDEC's Part 360 Regulations that regulate waste disposal:

- A transfer station for residential and commercial solid waste and recyclables;
- A yard waste compost facility; and
- A construction and demolition (C & D) processing and transfer facility.

All are located in Cutchogue. The Town does not collect residential or commercial waste and relies on private carting companies or residents to deliver waste to the facilities.

The transfer station accepts household and commercial garbage and recyclables, the compost facility accepts all manner of vegetative yard debris (e.g., leaves, brush, and land-clearing debris) for composting, and the C & D facility accepts non-hazardous building materials resulting from new construction as well as demolition activities. The compost facility produces leaf compost and woodchip mulch for public use. The facilities are operated by the Southold Town Solid Waste Management District under the Town's Solid Waste Coordinator.

On Fishers Island, solid waste is managed by Fishers Island Waste Management (FIWM), which runs a transfer and compost facility processing household garbage, furniture, appliances, recyclables, construction waste, and yard and landscaping debris. Hazardous wastes are collected one day a year. Fishers Island's waste is carted to Connecticut; thus, FIWM must comply with both New York and Connecticut laws regarding waste management and recycling.

### 🎯 Objective 9.1

#### **Continue to manage solid waste to protect public health and control pollution.**

- A** | Consider adopting a deconstruction code for the teardown of buildings to improve recycling.
- B** | Consider increasing recycling opportunities for organic materials beyond yard waste at the Cutchogue Facility.
- C** | Perform outreach to improve commercial recycling at the Cutchogue Facility.

### 🎯 Objective 9.2

#### **Consider appointing a Town Recycling Coordinator to further increase recycling opportunities in Town.**

### 🎯 Objective 9.3

#### **Continue to implement diversified recycling programs.**

In 2012 a total of 36,000 tons of incoming waste and recyclables was received, of which 31,000 tons were transferred off site for ultimate disposal and/or recycling. As indicated above, the Town's recycling program is efficient and progressive, collecting and processing 13 products for a total of 13,044 tons in 2012. A table summarizing the types of recyclable materials collected is included in **Appendix 4**.

### 🎯 Objective 9.4

#### **Plan for proper and effective construction debris disposal prior to undertaking major development or activities generating solid waste.**

- A** | Reduce the amount of solid waste generated by continuing to implement the pay-as-you-throw system.
- B** | Reuse or recycle material.
- C** | Support product stewardship efforts whereby manufacturers of items that are hazardous or pose uniquely difficult and expensive disposal or recycling challenges help organize and finance programs to manage those products properly at the end of their useful life. Also known as "extended producer responsibility," this approach to waste management has been adopted for a range of hard-to-manage products such as electronic waste ("e-waste"), rechargeable batteries, paint, pharmaceuticals, mattresses, and other items.

Manufacturers of these and other products have been required, through state legislation across the country (including in New York), to help local governments deal with the unique disposal/recycling issues they pose. Consider supporting product stewardship legislation at the state level, where appropriate, for items requiring substantial, unique, and costly end of life management efforts.

- D** | Use approved methods endorsed by NYSDEC to dispose of solid waste that is not otherwise being reused or recycled.

### 🎯 Objective 9.5

#### **Develop an Emergency Waste Disposal Plan to plan for the collection, storage, and disposal of debris and materials from natural disasters.**

Such a plan should address issues of collection, storage, and methods of removal (for ultimate disposal) of disaster-related debris. This debris would typically include vegetative matter (trees, stumps, etc.), rubbish (i.e., ruined contents from dwellings), and construction debris from damaged buildings. In addition, any rubbish and construction debris resulting from an emergency situation could contain a hazardous component which must also, in turn, be managed appropriately. Since disposal fees charged to residents have historically been waived for storm or emergency debris, issues resulting from the potential loss of revenue that would normally fund waste management and disposal activities would also need to be considered.

### 🎯 Objective 9.6

#### **Continue to operate solid waste management facilities to prevent or reduce water, air, and noise pollution and other conditions harmful to the public health.**

#### **Hazardous Waste**

NYSDEC regulates collection, storage and transport of hazardous waste within the Town through Part 360 permits.

Two types of hazardous waste that occur in town are household and industrial. Household hazardous wastes (HHW) are materials found in residential wastes such as oil-based paints, pesticides, automotive fluids, home hobby chemicals, cleaning products and compact fluorescent bulbs (CFLs). These chemical wastes are accepted free for proper handling and disposal from

residents on four special HHW drop-off days each year and should continue to be handled and discarded with special care.

Industrial hazardous waste is subject to regulations that are more stringent and is not managed by the Town due to regulatory controls. Rather, industrial standards and practices provide appropriate opportunities for this hazardous waste to be handled properly. The Town presents several opportunities to dispose of these substances annually.

### 🎯 Objective 9.7

**Ensure maximum public safety through continued management of household and industrial hazardous waste collection, storage, and disposal.**

In 2012, a total of 60 tons of household hazardous waste was collected over four days through the Town's STOP (Stop Throwing Out Pollutants) Program. It is recommended that the Town and Fishers Island Waste Management continue to hold hazardous waste collection days.

### 🎯 Objective 9.8

**Remediate inactive hazardous waste disposal sites.**

Future use of a site should determine the appropriate level of remediation.

### 🎯 Objective 9.9

**Prevent and remediate discharge of petroleum products (waste oil) by following methods approved for handling and storage of petroleum products and using approved design and maintenance principles for storage facilities.**

### 🎯 Objective 9.10

**Transport solid waste and hazardous substances and waste in a manner that protects the safety, well-being, and general welfare of the public, the environmental resources of the state, and the continued use of transportation facilities.**

### 🎯 Objective 9.11

**Site solid and hazardous waste facilities to avoid potential degradation of coastal resources.**

Solid and hazardous waste facilities should not be located within the coastal area unless there is a demonstrated need for waterborne transport of waste materials and substances. If the need for a coastal location is demonstrated, preclude impairment of coastal resources from solid and hazardous waste facilities by siting these facilities so that they are not located in or would not adversely affect:

- Agricultural lands
- Natural protective feature areas
- Surface waters, primary water supply, or principal (sole-source) aquifers
- Designated SCFWs
- Habitats critical to vulnerable fish and wildlife species, vulnerable plant species, and rare ecological communities
- Wetlands

➤ **Responsible Parties:** Southold Town Solid Waste Management District, Fishers Island Waste Management District

➤ **Possible Partnerships:** New York State Department of Environmental Conservation

## 🎯 Goal 10: Reduce Light Pollution

Light pollution wastes energy, disrupts natural processes including leaf retention on deciduous trees and bird migration, as well as being detrimental to human health. LED lighting is far brighter and often of a cooler, blue light temperature (blue light is disruptive of circadian rhythms and sleep cycles).

### 🎯 Objective 10.1

**Revise Town Code to address LED technology.**

The Town Code for exterior lights was revised just before LED technology was widely available. Updating the code is necessary to address the issues related to LED's.



